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Taking Stock:

An Investigation into the Nature, Scale and Location of Secondary Commercial Office Vacancy in the UK and an Appraisal of the Various Strategies and Opportunities for its Management and Amelioration

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PhD

2016

Taking Stock:

An Investigation into the Nature, Scale and Location of Secondary Commercial Office Vacancy in the UK and an Appraisal of the Various Strategies and Opportunities for its Management and Amelioration

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A thesis submitted in partial fulfilment of the
requirements of
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Architecture and Built Environment

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Abstract

There has been little comprehensive investigation of secondary office vacancy in the UK, nor its potential management or amelioration. In response, this thesis is a study of the nature, scale and location of this situation and an appraisal of the various strategies for its management and amelioration. There are three strands of research. An investigation into the nature, scale and location of secondary commercial office vacancy in the UK. An appraisal of potential management strategies and the development of policy recommendations in relation to the potential amelioration of this situation. An appraisal of the literature was conducted to develop an initial theoretical interpretation of secondary office vacancy. A multi attribute database of commercial office vacancy was then developed to evidence the stock of secondary office vacancy in the UK. Finally, a Delphi exercise was conducted to understand the underlying conditions of this phenomenon, its management and potential amelioration. Findings indicate that secondary office vacancy is ambiguous and colloquial. Vacant secondary office property exists in abundance while prime office property is in short supply. The institutions of the commercial office market over simplify and potentially disguise its manifestation. The incidence of secondary office vacancy is primarily caused by a structural change in the nature of demand. It can be held in reserve to support prime office supply, however, it can also overhang less buoyant locations. Consequently, the management strategies for secondary office vacancy are stratified, ranging from exploitation, to demand repositioning, to renewal and finally removal and redevelopment. Findings suggest that these management strategies should be predicated upon the demonstration of economic viability and mediated by the relative era of construction and underlying institutional characteristics. Finally, policy recommendations suggest that the amelioration of secondary office vacancy would be assisted by the promotion of more agile ways of working based on functional tolerance, and optionality.

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Authors Declaration

This research has not been submitted for another award, it is the work of the student alone, acknowledges the work and views of others and has attained ethical approval. Aspects of the analysis and discussion at the heart of this study has been presented at the Annual Royal Geographic Society International Conference 2014, and the TPUD International Workshop 2015. Furthermore, elements of this work have been published in:

Muldoon-Smith K and Greenhalgh P (2015) Passing the buck without the bucks: Some reflections on fiscal decentralisation and the Business Rate Retention Scheme in England. *Local Economy*, 30(6):609-626 (see Appendix 7).

Following exposure in The Planner and the Estates Gazette over the summer of 2014, elements of the research have subsequently been recognised by a leading serviced office provider, Citibase Ltd, to form the basis of a quarterly secondary office publication series. The first edition of which was published in August 2015, Taking Stock: Secondary Opportunities and the Agile Future (see Appendix 7).

Word Count: 88,000

Name:

Date:

Signature:

Date:

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This thesis would not have been possible without the support and guidance of Paul Greenhalgh. It was he and Brian Ablett at the Association of Chief Estate Surveyors and Property Managers in the Public Sector (ACES), who first suggested a PhD in relation to the incidence of commercial office vacancy and public sector retrenchment in northern cities. Since then it has been both a challenge and a dream to explore the complexities and peculiarities of underperforming commercial office property (how the study has evolved since these early days). I would like to thank him for his unwavering support and enthusiasm throughout the course of my PhD, for supporting various opportunities to teach and travel and more broadly for giving me the freedom to explore other academic spin-off topics in the related areas of commercial real estate. Without doubt these lines of enquiry have enriched and fed back into my PhD study. I would also like to thank Helen King and Ernie Jowsey for their valued support, encouragement and supervisory input. I am indebted to both for their time, assistance and prescient thoughts and suggestions. Gratitude is also extended to the Northumbria University graphics team and Citibase Ltd for their support in the preparation of database info-graphics. They have helped me prove that you can have all of the data in the world but without visualisation it is nowhere near as meaningful.

Thanks go to everyone who has contributed to this research, friends who have taken the time to listen and the many coffee shop workers who have probably seen more of me than my family during write up. Special thanks go to those who have taken the time to contribute data and advice (especially Mark Amson at Leeds City Council) and all of the office agents, investors, developers, designers and public sector officers, who agreed to give their time in the Delphi exercise. All efforts have been taken to represent your views in their original narrative format within the text. I can only hope that I have done them the justice they deserve.

I would also like to remember Duncan Fuller who sadly died in 2008. Duncan's support during my undergraduate dissertation (conducted mostly amidst the fumes in his office) nurtured my love and passion for the critical view point. Without his early belief in me, I would not be following this research path. In the end, it took a little longer to continue with my academic research, several years in practice, marriage and two children came along. Without doubt all of these events and experiences have significantly enriched my perspective as a researcher.

My work would not be possible without the abiding support of my wife, Michelle, who has tolerated all of the conversations about my research without her eyes glazing over (at least perceptibly). Apologies for all of those times when I was pretending to watch the television when I was actually typing. The three years of PhD study have certainly been eventful, two children have joined the family (and one house got destroyed in a flood - all good fun) but I would not change a thing. In doing so, alongside side my Mam, Dad, and Brother, I dedicate this thesis to all of my family, for their love support and encouragement. Thank you.

Glossary

Adaptive re-use:	An alteration from original use
BPRA	Business Premises Renovation Allowance
Building agility	The relative ability to move from one use to another
CBD:	Central Business District
DEC	Display Energy Certificate
EPC	Energy Performance Certificate
Hereditament	The legal term for a unit of commercial property upon which it is possible to levy tax
Lock-in	When locations, or in this case buildings, are locked into historical, institutional, behavioural or theoretical domains
Meanwhile use	Involves a temporary fix to vacancy and something that takes place in the interval between one use and the next
MEPS	Minimum Energy Performance Standards
NNDR	National Non Domestic Rates
Overhang:	A concentration of vacancy that undermines and suppresses nearby locations and underlying rental values which can lead to a downward trend in property value
PDR	Permitted Development Rights
Prime Stock	Typically the most recent additions to and most desirable segments of commercial office stock
Rateable Value	The Government's assessment of property rental value for tax purposes
RI CS:	Royal Institution of Chartered Surveyors
Secondary Stock	Typically older office stock in relation to the traditionally more desirable prime stock
Structural Vacancy:	Vacant office property that no longer has a relationship with occupier demand in its present use
VOA	Valuation Office Agency

Chapter 1 Introduction

‘Time makes the high building costs of one generation the bargains of the future generation...time makes certain structures obsolete for some enterprises and they become available for others’

(Jane Jacobs, 1962:247).

1.1 Motivation for study

Commercial office vacancy is an international problem. Research in Western Europe (Remoy, 2010; Janson and Lloyd, 2012; Janson, 2012), Asia Pacific (Wilkinson, James and Read, 2009; Wilkinson and Reed, 2011; Remoy and Wilkinson, 2012) and North America and Canada (Beauregard, 2005; Bullen and Love, 2009) indicates the pervasive nature of underutilised and vacant commercial office stock in certain locations throughout the world. However, this situation has received little attention in the UK in recent years. In response, the aim of this thesis is to expose this situation by analysing the incidence of secondary office vacancy in the UK through an analysis of 27 locations. Section 3.5 details the extent of the UK study area, explaining the selection of locations and the omission of others (for instance Edinburgh, Birmingham, Bristol, Sheffield and Belfast) due to limited access to data in these locations during the research.

The Jones Lang Lasalle Little Book of Real Estate Definitions (the only definitional resource that the researcher could find) describes prime and secondary property in the following way,

- Prime: Refers to property which is the best in terms of rentals and location
- Secondary: Property which is below that of prime in relation to rentals and location, generally high quality but not in CBD location.

The incidence of secondary vacancy is introduced in Section 1.3, while a full exposition and definition of secondary offices is presented at the beginning of Chapter 4. While conducting exploratory research it soon became apparent that the nature, scale and location of commercial office property, in particular secondary office vacancy was under researched. There were some notable exceptions, Greenhalgh (2006) and Katyoka and Wyatt (2008) and Myers and Wyatt (2004). However, none of the authors specifically

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interrogated the issue of secondary office vacancy. This exposes three underlying research problems (see Chapter 2 for the development of these problems following an exploration of literature) which run consecutively and guide the empirical enquiry in this thesis. First, the nature, scale and location of secondary office vacancy is unknown. Second, consequently, it is difficult to address the management of the incidence of secondary vacancy. Third, it is difficult to consider how this situation could be ameliorated in the future.

Without an initial understanding of the nature, scale and location of secondary office vacancy, it is difficult to consider how this situation might be managed or ameliorated in the future. Therefore, the challenge for this research is first of all developing a stock appraisal of secondary office vacancy and then grounding this physical analysis in an appreciation of the social, political, institutional and cultural production of secondary office vacancy and its potential management and amelioration. Reflecting this challenge, the underlying argument in this thesis is that outside of Central London, significant quantities of underused and vacant commercial office property will never be efficiently utilised within their current conditions again.

Nevertheless, even though there is a discernible oversupply of office supply in certain locations, developers and investors continue to construct even more office buildings with ever greater degrees of specification, further exacerbating this situation.

Albert Einstein allegedly quipped that,

'If a cluttered desk is a sign of a cluttered mind, of what, then, is an empty desk a sign of?'

In a slightly broader context, what do underperforming and empty office properties (see Figure 1.1 and 1.2) tell us about the cities in which they reside, the landlords who own them, and the institutions of the commercial real estate markets which govern them? Why when so much office stock is poorly utilised or entirely vacant is even more new property constructed with similar design and institutional rationales?

Introduction

Figure 1.1 Vacant Office Cliché

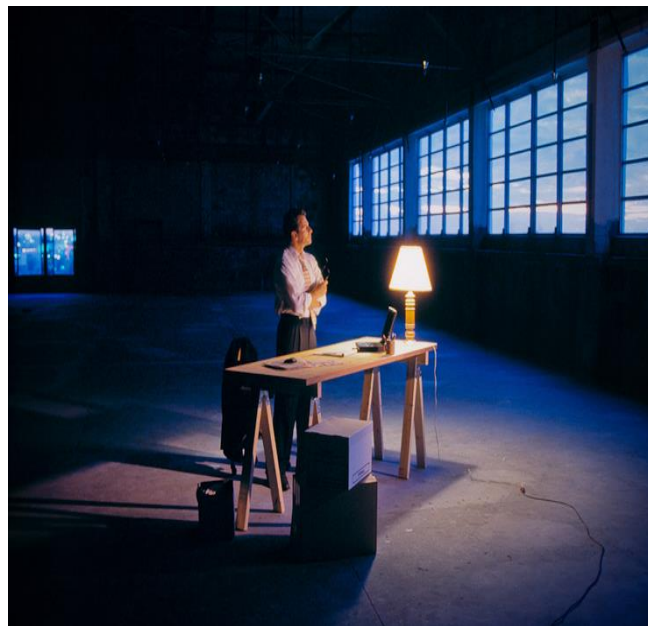


Source: (sourceable.net)

Figure 1.2: Vacant Office Space



www.rollonfriday.com



www.morphoto.com

Introduction

One way of considering this situation is that empty offices provide,

'A window into the soul of our shifting economy'

(Carter 2015, quoted in Sourcable.net 16 February 2015).

Some commercial office vacancy is a 'necessary' attribute of property markets. The efficient operation of the commercial office market, reflected in churn and filtering (Greenhalgh et al., 2003; Greenhalgh, 2008) cannot happen without a certain degree of vacancy. This type of vacancy can be understood as that part of office stock that efficiently clears in response to the needs of occupier demand. This process of vacancy is generally referred to as initial, frictional or cyclical in nature (see Chapter 4 for an exposition of each type of vacancy). However, this perspective does not tackle those office properties that do not efficiently clear through the market mechanism. This type of vacancy is not just a problem for commercial property landlords; it is also a problem for every nearby small business owner who depends on office workers for daily trade. Each empty desk represents one less person spending money in town, city and regional centres (Carter, 2015).

Indeed, underperforming office properties can display a combination of economic, functional and physical obsolescence (Remoy, 2010). They generate negative externalities, overhang the local property market and suppress values and investment while they also cause visual blight in their immediate surroundings. In addition, they represent high embodied energy from production and are a waste of resources, in terms of capital investment, holding costs and land use.

Underperforming and vacant office buildings offer a powerful mode of reflection in relation to societies most wasteful practices. Increasingly, commercial office buildings engage consumer demand for relatively fleeting moments in time, yet, endure for long centuries in the built environment. The traditional commercial office building has gone through various traditions (see Section 2.1 for a full exposition) which can be defined by conspicuous design (see the contemporary skyscraper) and functional atypicality. This has created layers of historical development in mature office market locations. However, more recently the traditional notion of the office building is potentially dissolving.

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Following the opening of the Frank Gehry designed Facebook headquarters in California, Marc Kushner (2015) heralded the end of the office, arguing that social media is changing the way we consume the built environment. This statement is not necessarily as hyperbolic as it may first appear, technology is increasingly pervasive. However, Lausberg (2008) indicates that this situation is little known in contrast to traditional perspectives of market efficiency. Indeed, there is uncertainty in relation to the types and segments of office property that no longer efficiently clear through the traditional market mechanism. The aim of this study is to investigate this situation in the UK and fill this gap in knowledge by analysing the secondary office market and the incidence of secondary office vacancy. The secondary focus is vindicated in proceeding chapters where it becomes increasingly apparent that a simple bifurcation between positive and negative vacancy does not exist. Secondary office vacancy transcends both positions, indicating the ambiguous and dynamic nature of the commercial office market.

The rationale behind this approach is encapsulated by a research participant who indicated that,

"In certain locations, the prime market only accounts for around 4% of supply yet it receives 96% of the attention. The secondary office market is invisible."

The largest segment of the office market, the secondary market, is largely unknown and consequently ignored. Yet, this situation is surprising, new real estate development each year only accounts for 2% of building supply according to Kincaid (2002) and Kelly (2012). Given the typical rate of replacement, this means that the vast majority of office stock has either already been built in the westernised world or is being constructed at breakneck speed in the developing world right now (for example see Songdo, South Korea). Accordingly, how society uses, maintains, and manages its secondary resources in order to satisfy its appetite for new ways of living, could define the cities of the future and must therefore be a central concern for contemporary society. Indeed, Wilkinson et al (2014) attest that the continuing use of existing commercial real estate stock is a universal concern.

They argue that,

'There is a need for greater knowledge and awareness of what happens to societies buildings over time and how we might adapt them sustainably. This action includes avoiding premature destruction through finding new uses for buildings that have become unwanted or obsolete. While new development must also be sustainable, there is insufficient time for us to act unless proactive intervention into the performance of existing building stock becomes a priority'

(Wilkinson et al., 2014:5).

Exposing this situation is vital because commercial office buildings are frequently rendered redundant long before the cessation of their physical lifespan. These office properties are stranded assets, suffering unanticipated or premature write downs, devaluations or conversions to liability ahead of time. From the author's own experience as a practitioner, observing commercial real estate development and regeneration projects, it was apparent that this situation is largely ignored. The views of occupiers and stakeholders on the ground are largely disregarded and office buildings constructed with little attention to the requirements of the user or whether any demand for new space actually existed in the first place. The major frustration was that all of the attention of commercial real estate development, its institutions and market updates, seemed to be concentrated on the premium end of the market, ignoring everything else.

Therefore, the normative persuasion and justification for this thesis is centred on the urban need to effectively maintain, and re-use, existing built environment resources in the 21st Century. There is considerable contemporary discussion in relation to the transformative power of technology and the various notions of the smart and future cities (Batty, 2013). Yet, there is little reflection in relation to the towns and cities we already have around us (much of them built hundreds of years ago) and how we can maximise their inherent potentiality. In order to improve this situation, we must consider the ethics of what and where we produce commercial office stock. What we build and how we build speaks volumes about who we are as a culture. As Jacobs (1961) memorably argued, the greenest buildings are the ones we already have. However, despite this normative recognition, no one has opened the lid and looked inside the secondary office market in the UK. This enables the thesis to reflect upon the nature, scale and location of the secondary office market and the opportunities it provides for potential re-use

(Chapter 4). This analysis then inevitably raises the normative challenge: how might office building use be considered and promoted in more sophisticated ways in order to manage and ameliorate the incidence of secondary office vacancy? Chapters 5 and 6 respond to this challenge.

1.2 The Opportunity: Exploiting Secondary Office Vacancy

The secondary office market represents an untapped (market of) opportunity, one that is ripe and overdue for comprehensive investigation. The Chief Executive of a leading serviced office provider argued that,

"The forest of secondary office property is huge, yes, there is room for demolition, but there is also room for agile office accommodation, loft conversion and conversion into another use. With recognition and vision the opportunities are endless."

This coheres with the arguments of Ellison and Sayce (2007) and their research in relation to changing lease structures and the potential for increased 'in use' and 'alternative use' adaptation measures (arguments also reflected in the earlier research of Brand, 1994 and Kincaid, 2000). They argued that reductions in the average lease term in the UK raise the potentiality and importance of adaptation. This is because commercial office properties increasingly have to meet the requirements of tenants, in a variety of uses, in order to preserve and potentially increase investment return. An office building that has fewer opportunities to adapt in relation to the changing requirements of urban consumers, in comparison to other buildings within the office market, will endure accelerated functional depreciation, premature asset write down and devaluation, higher tenant turnover and consequent loss in rent (Ellison and Sayce, 2007).

Encouragingly, aspects of urban re-use are beginning to take root and gain publicity in international literature. The most famous example is the New York High Line in North America (see Figure 1.3).

Figure 1.3 New York High Line



Source: Gaurdian.co.uk

Indeed, so called ‘urban ghosts’ (abandoned parts of the built environment) are now being transformed into new uses all over the world. Examples include the proposed low line beneath Manhattan in the disused Essex Street Trolley Terminal and proposals for disused underground metro stations to be turned into swimming pools, parks and theatres in Paris. While in the UK, the conversion of the Bankside Power station in London into the Tate Modern Art Gallery (see Figure 1.4) is a prime example of adaptive re-use.

Figure 1.4 The Tate Modern



Source: Tate.org.uk

It would be churlish to suggest that examples of successful office re-use activities do not exist. Examples of office re-use and conversions have been around in the UK since at least the 1960s, however, they are relatively rare. A recent example, during the early 2000's, is the 55 Degrees North Development (Formerly the Swan House Office Building) in Newcastle upon-Tyne (Figure 1.5).

Figure 1.5 55 Degrees North



Source: Newcastlephotos.blogspot.com

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Buildings like the Round Foundry in Leeds' Holbeck (Figure 1.6), and the Toffee Factory (Figure 1.7) in Newcastle's Ouseburn are also exemplars of successful building re-use.

Figure 1.6 The Round Foundry



Source: Simple Useability.com

Figure 1.7 The Toffee Factory



Source: Toffee Factory.com

Introduction

However, these projects necessitated concerted asset management, vision, public funding and a 'coalition of the willing', to move these buildings from their previous telecommunication, public sector and food based functions into new profit making futures. An underlying aim of this thesis is to reveal these challenging circumstances in similar situations in the UK. Expanding knowledge in this area will help urban practitioners in mature urban areas deal with the challenges of an ageing and continually changing urban landscape. However, it is also important to note, that this approach will also help those practitioners dealing with the demands of accelerating urbanisation in the non-western world which requires an understanding of the various urban development processes and how to manage them.

Yet, illustrating the complexity of this situation, it is important to note that Barlow and Gann (1993, 1996) researched some of these issues (predominantly in relation to office to residential conversion) two decades ago and identified some limitations. They argued that, while the conversion of redundant office buildings into residential use could help create mixed use urban villages, it should not be seen as a panacea for either housing shortage or the re-use of redundant office buildings. This is because there are significant barriers to promoting and maintaining increasingly integrated environments, particularly in relation to the fusion of the built environment and socioeconomic processes (Rowley, 1996).

1.3 Choice of Study Area: The UK Office Market

The chosen study area is the UK office market outside of Central London. The UK office market can be split into national, regional and local office markets and can trace its lineage back more than two centuries. The transformation from manufacturing to service economy during the last century coincided with the emergence of the office building as the dominant form of urban development in town and city centre locations in the UK.

The office market first developed and is still predominately concentrated in London, particularly Central London (rightly considered a global city by Lizieri, 2009) and the South East. Outside of London, there are separate office markets in the regional core cities of Bristol, Birmingham, Nottingham, Sheffield, Liverpool, Manchester, Leeds and Newcastle and in the devolved areas of Edinburgh and Glasgow. In addition, there are significant concentrations of office property in Aberdeen, Cardiff, Luton, Oxford,

Cambridge, Reading, Milton Keynes and Luton. Furthermore, there are smaller concentrations of office property in Surrey (Spelthorne and Guildford), Chelmsford in Essex, Hemel Helmsford, Welwyn Hatfield and Watford in Hertfordshire and Northampton in the East Midlands (LSH, 2014) (See Section 2.2 for a wide ranging appraisal of the UK Office Market).

In the UK, prime office stock is currently in short supply. All of the leading office agencies are reporting deficit in relation to this issue (Lambert Smith Hampton 2015). Yet, in recent years, the same office agencies have also reported an oversupply and 'perfect storm' of secondary office stock with the potential to adversely affect urban areas. CBRE (2012) examined the secondary office market in Aberdeen, Birmingham, Bristol, Edinburgh, Glasgow, Leeds, Liverpool, Manchester and Southampton and found that total secondary availability across the nine regional cities increased from 6.8 million sqft in 2007 to 13.3 million sqft by the end of 2011, an increase of 97%. Glasgow witnessed the biggest increase in availability, 213%; Southampton was lowest at 50%. CBRE (2012) indicate that the availability of secondary office stock in Birmingham has increased by 171% since 2007, increasing from 710,619 sqft to 1,923,431 sq ft.

In contrast, availability of prime office space has fallen, with less than 700,000 sqft ready for occupation (CBRE, 2012). Illustrating this situation, in Birmingham, the overall vacancy rate was 17.1%, however, for prime property it was only 2.6% (CBRE, 2012). Yet, since 2012, secondary office vacancy has largely vanished from the practitioner press amidst a renewed focus on prime office development. Savills (2014) are a notable exception. They indicate that across Western Europe, polarisation continues between prime and secondary office properties, as absorption takes place in prime properties while vacancy grows in secondary buildings and locations. This polarisation and sub-optimal situation is the central concern of this study.

1.4 Research Gap

Figure 1.8 The Office Time Bomb



All office vacancy does not clear the market. Certain commercial office properties (Chapter 4 indicates the majority), typically located in the secondary market, do not adapt to the increasingly unstable requirements of occupier demand. Some of these properties will never satisfy business demand in their present guise again without some kind of intervention (Muldoon-Smith and Greenhalgh 2014, see Figure 1.8). However, while the prime office market is relatively well known in terms of theory and information, the characteristics of the secondary market segment are largely unknown. Hence, it is difficult to consider

the management or amelioration of this situation.

In response, the proceeding analytical framework and the complimentary research aims, objectives and questions, define and structure the response to this deficit.

1.5 Analytical Focus

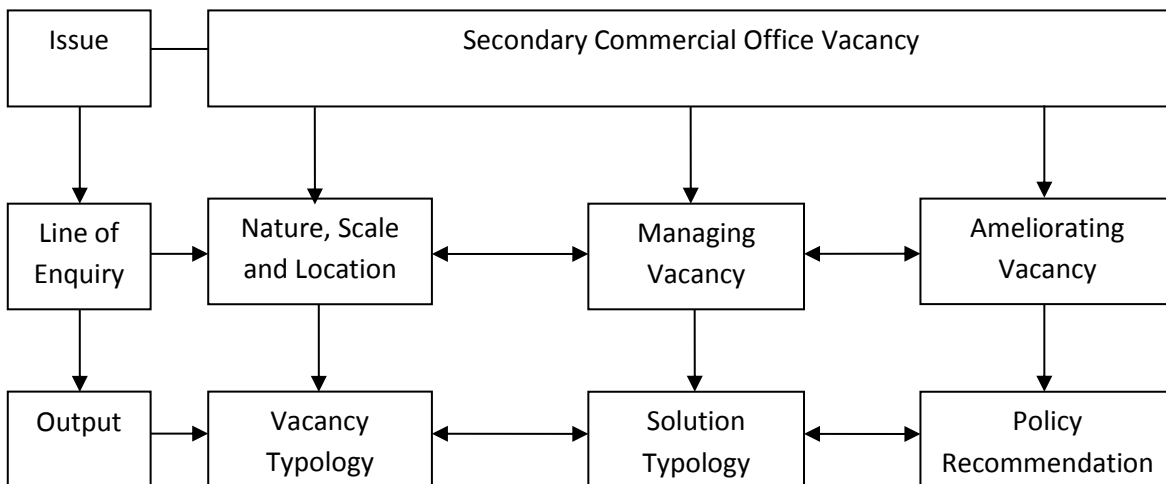
The thesis addresses three underlying research objectives (identified in Chapter 2) through the proceeding complementary research questions.

1. What is the nature, scale and location of secondary commercial office vacancy in the UK?
2. How can the incidence of secondary commercial office vacancy be managed and exploited in the UK?
3. How can the incidence of secondary commercial office vacancy be ameliorated in the future?

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Firstly, the thesis investigates the nature, scale and location of secondary commercial office vacancy in the UK, concluding with a causal explanation and conceptual typology of office vacancy. Secondly, it investigates the various options, and associated opportunities and challenges that landlords and local property market actors, can pursue to manage and exploit this situation. This strand of investigation concludes with a solution typology. Thirdly, the thesis then considers what type of conditions promote continual building re-use, concluding with a set of policy recommendations that have relevance for landlord, investors, those working in the public sector and those charged with producing guidance and accreditation for practice. Figure 1.9 depicts the analytic structure of the research.

Figure 1.9 Analytical Process



Consequently, the aims of the thesis are to,

1. Reveal the nature, scale and location of secondary commercial office vacancy in the UK.
2. Investigate how secondary commercial office vacancy can be managed and exploited in the UK.
3. Explain how the incidence of secondary office vacancy could be ameliorated in the future.

The objectives of the research are to,

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1. Develop a theoretical context for secondary office vacancy.
2. Explore the resources that are currently available to appraise secondary commercial office property.
3. Expose the characteristics of secondary office vacancy.
4. Explain the causes of secondary office vacancy.
5. Evaluate perceptions in relation to secondary office property and its potential re-use.
6. Determine the opportunities and challenges that influence the re-use of vacant secondary office properties.
7. Make recommendations that will influence flexible and continual re-use of secondary office properties.

1.6 Research Originality and Contribution to Understanding

The original contributions to knowledge made by this thesis can be divided into five themes:

1. Breadth of Study
2. Theoretical Perspective
3. Methodological Innovation
4. Typology Outputs
5. Recommendations for Policy

1.6.1 Breadth of study

Few studies have considered the topic of commercial office vacancy, nor its management and amelioration. Notable exceptions include the work of Remoy (2010), Gearedts and Van der Voordt (2007) in Western Europe and the research of Wilkinson and Read (2011) and Langston (2007) in Australasia. In the UK context, the topic has received historical attention from Kincaid (2000, 2002), Barlow and Gann (1993, 1995), Heath (2001), in the physical appraisal of Douglas (2006) and more recently by Katyoka and Wyatt (2008). This thesis aims to contribute to this literature and to re-appraise historical research in the UK.

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The thesis is very much located within, has taken great inspiration from, and updates the prophetic work of David Kincaid (2000, 2002). Kincaid first raised awareness of office vacancy and its potential re-use based on examples of this practice in Canada, North America and London in the mid 1990's (alongside Barlow and Gann, 1993, 1996 and Heath, 2001 during the same period). This thesis benchmarks the earlier work of Kincaid (2000, 2002), updates it in the present day and locates this analysis within an appraisal of commercial office vacancy in the UK (something that this previous work did not do). Others have contributed since, most notably Remoy (2010) and Langston (2007, 2011) and Wilkinson et al (2014). However, in the main these works concentrate on the conversion of vacant office buildings into residential use. This thesis seeks to broaden the scope of office re-use, positioning it within a spectrum of agile interventions (a full exposition of building agility is provided at the beginning of Chapter 5, a short definition is provided in the glossary of terms). It indicates that re-use does not begin and end with physical transformation, rather, this is one of a range of intervention measures. For instance, depending on the relative market locations and individual building predicament, repositioning into serviced offices or outright demolition and redevelopment may also be appropriate.

Consequently, this thesis ventures an alternative definition to the traditional focus on adaptive re-use, based on agility (see Chapter 5). This was because research participants indicated that adaptive re-use was not suitable and little used in relation to the issue at hand. Proceeding chapters will illustrate that although relatively little known, Kincaid's (2000, 2002) work has more than stood the test of time and the international literature is basically an echo of his work in an alternative context. Indeed, participant findings suggest that the physical characteristics of commercial office vacancy and the bearing of the same on potential re-use, have remained largely static. However, what has changed (and continues to do so) is the context of commercial office vacancy, the requirements of occupiers, the legislative and institutional framework and the attitudes of those involved in the management and potential re-use of commercial office buildings in local real estate locations.

With the exception of Katyoka and Wyatt (2008) and Douglass (2006), all of the UK authors based their appraisals on the incidence of vacancy during the latter part of the 20th century (Douglass, 2006, did not discuss the incidence of vacancy, only the physical characteristics of its potential adaptation). So, the most comprehensive analysis of office

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vacancy and potential re-use, that of Kincaid (2000, 2002), was based on empirical research during the period 1994-1996. This means that the received wisdom in the UK is based on research conducted 20 years ago. Furthermore, all of these studies, with the exception of Katyoka and Wyatt (2008) who investigated the Leeds area, concentrated on the Central London office market. The locational atypicality of research, often located in global city locations, contributes to a situation where spatial variation of vacancy and its potential re-use is difficult to comprehend. Hence, the received wisdom in relation to the incidence of vacancy and its potential re-use is based on contexts where economic viability is largely a given, due to the buoyant local rental value structures which underwrite such locations.

In such locations it is not a question of whether future rent can cover the costs of building change, rather, how much rate of return can be made in the highest value use. The application of these findings across wider spatial geographies and secondary market locations runs the risk of over simplification, due to over generalisation. Indeed, Chapter 2 demonstrates that using London as a proxy for the rest of the UK plays a role in disguising the manifestation of secondary office vacancy.

In response to this deficit, the UK study in this thesis is the first contemporary appraisal of a mature office market (the work of Remoy, 2010; Wilkinson et al., 2014; Langston, 2007 occurs mainly in immature locations) outside of the capital city context. To the author's best knowledge, it is the largest appraisal of commercial office vacancy that has been conducted. More than 14,000 individual incidences of commercial office vacancy have been appraised in order to form an understanding of the nature, scale and location of commercial office vacancy in the UK. An appraisal of this magnitude is vital, as we must first of all understand the incidence of commercial office vacancy before we attempt to appraise the opportunities and challenges involved in its potential management and amelioration.

1.6.2 Theoretical Perspective

The theoretical perspective and normative persuasion of this thesis is firmly centred in the recent academic engagement with the social construction and relational complexity of economics and real estate. It is informed by the work in recent decades of Guy and Henneberry (2000), Beauregard (2005), Greenhalgh (2008), Adams and Tiesdell (2010),

and Healey (2010), all of whom highlight the local textures of property markets and the dynamic reality and sub-optimal behaviour of occupier demand. In doing so, this research and the subsequent thesis, investigates a very old and established part of the built environment (re-use) from a relatively new set of perspectives that have largely been ignored in academic literature. Indeed, Chapter 2 will argue that commercial property research is still largely dominated by neo-classical economic perspectives and physical appraisal. Consequently, the consideration of secondary office vacancy and its potential re-use is mostly theory neutral. The thesis responds to this situation by adopting a critical realist ontology based on a stratified reality which is underpinned by contingent relations, generative mechanisms and underlying tendencies.

This approach can trace its lineage to the work of Tony Lawson in Economics (1989), Julie Lawson (1996) in Housing Studies, Bob Jessop (2001) in Marxist interpretations of class, culture and space, and the recent work of Naess (2014) in Planning. Critical realism separates the real structures of society from individual and societal agency. In this sense it is different to similar theories of structuration, (such as those of Giddens, 1994) but concedes and compares the effect of one upon the other. This allows the thesis to trace a path between the traditional neo-classical emphasis on supply and demand and the more recent engagement with socio-economic, behavioural and evolutionary modes of economic analysis (Guy and Henneberry, 2000; Adams and Tiesdell, 2010).

This approach enables an engagement with the socio-institutional environment within which secondary office vacancy, its management and potential amelioration exist. Consequently, the research focus extends the relatively rare work of Guy and Henneberry (2000) acknowledging and then relating the structure and behaviour of land and property markets with the actors within those markets (Healey, 1998, 2006, Coiacetto, 2000; Greenhalgh, 2008; Adams and Tiesdell, 2010; Henneberry and Parris, 2013). This perspective allows the research to view the generation of secondary office property as dynamic, deeply contextual and contingent upon the sub-optimal aims and objectives of property market actors in a continually shifting market framework (Guy and Henneberry, 2000). Following the inter-related institutional and relational turns during the 1990 and 2000s (Healey, 1998; Guy and Henneberry, 2000) the property market is increasingly viewed as a social construct, inhabited and defined by,

'A web of market actors, such as developers, investors, occupiers and professional intermediaries, whose relations are influenced by the regulatory and policy environment'

(Henneberry and Parris, 2013:227).

This perspective and theoretical underpinning has enabled the researcher to set out an alternative theoretical interpretation, based on path dependence and lock-in (Chapter 2) and building agility (Chapter 5). This position has been developed to help understand the incidence of secondary office vacancy and is the first known theoretical perspective for the secondary phenomenon and how this situation may be managed, exploited and ameliorated.

1.6.3 Methodological Innovation

Methodological originality is both quantitative and qualitative. Quantitative originality is related to the stock appraisal of secondary commercial office vacancy in the UK, the results of which are reported in Chapter 4. Based on original work conducted more than ten years ago by Myers and Wyatt (2004) and Katyoka and Wyatt (2008), this appraisal necessitated the creation of a unique data set combining National Valuation Office Summary Valuation Statistics and National Non Domestic Rate Returns (NNDR). The summary valuation data set contains an exhaustive inventory of commercial property stock in England and Wales, including floor space and rateable value measurements. In contrast, the NNDR data set contains an appraisal of commercial office vacancy in England, Wales and Scotland. When both datasets are combined it is possible to create a picture of commercial office vacancy in the UK.

The original research conducted by Katyoka and Myers (2008) concerned the area of Leeds. This research broadens this approach with the incorporation of an additional 26 locations in the UK (a sample rationale is explained in Chapter 3). Using commercially available datasets (EGI and Co-Star Focus) the database has then been further improved with additional layers of analysis including respective grade (divided into prime and secondary segments) and era of build. A filter methodology has then been developed in order to expose those properties that overhang the respective property markets most, defined as 'acute vacancy'.

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Acute vacancy has the potential to be used as a 'stock picker' tool to aid intervention strategies and potential change-in-use applications. This part of the analysis necessitated the aggregation of individual hereditaments into whole building assessments and the creation of relative property scores based on a combination of rateable value and length of vacancy. Acute vacancy demonstrates that those properties that are vacant longest are not necessarily those properties that overhang office markets the most (in contrast to Remoy's, 2010 definition of structural vacancy). Rather, relative overhang is a combination of contingent factors which include but are not restricted to, value, location, prestige and length of vacancy.

In addition, 'compound loss' has been developed as a proxy measurement for the cost of vacancy. Compound loss is a composite indicator combining rateable value (as a proxy for rental loss) and empty property rates (as a proxy for holding cost). Consistent with the principles of critical realism, no causality is derived from this element of research. Rather, a descriptive understanding of secondary commercial office vacancy in the UK is introduced.

This stage of descriptive analysis is complemented by an additional layer of rich qualitative enquiry utilising a Delphi consensus study. Examples of rich contextual studies in commercial real estate research are rare, applications of the Delphi technique are even less frequent (Greenhalgh and Bendel, 2015 is a notable exception). Remoy (2010) herself is another rare exponent of the Delphi technique but chose to apply its rationale in a quantitative fashion based on pre-conceived physical building attributes gleaned from an initial literature review. The approach in this thesis chose to start with a relative blank canvas, with a broad interview guide. This was in order for the respondents to define the pathway of study. The only piece of pre-conceived benchmarking was the utilisation of Kincaid's (2002) physical attributes of vacancy and characteristics of adaptation (Chapters 4 and 5 indicate that the physical issues of vacancy have not changed markedly). However, by and large, the Delphi exercise was open-ended in nature. The use of the constant comparative approach to thematic analysis allowed analysis of the first stage of questioning, which then informed the design of the subsequent stage in questioning. The method of grounded theory was then used to interpret and develop theory (see Section 1.6.2).

1.6.4 Definitions and Typologies

The thesis contains three original definitions:

1. Secondary office property
2. Structural vacancy
3. Building/urban agility

This thesis contains the first known interrogation of the ambiguous and taken for granted concept of secondary office property and sets out for the first time a working explanation of this office property segment. Within this explanation the thesis also sets out an alternative definition of structural vacancy (in contrast to the work of Remoy, 2010) which is positioned at the macro level. It argues that any further definitional clarity is dependent on contingent locational circumstances. Furthermore, research participants indicated the traditional focus on adaptive re-use was not a useful term and that a more flexible concept that captures the dynamism of commercial office building re-use was needed. Therefore, in Chapter 5, the thesis recasts adaptive re-use into building agility. This reformulated concept is the practical response to the theoretical construct based on path dependence and 'lock-in' identified in Chapter 2.

The thesis also contains four original typologies:

1. Eras of construction
2. Concepts of vacancy
3. Agile management options
4. Intervention scenarios

Traditionally, the incidence of commercial office vacancy has been viewed non-critically and taken as a disconnected given. For the first time, the exposition of the office building era typology in Chapter 2 connects this manifestation into the socio-economic evolution of the commercial office market in the UK. This typology is then fed into Chapter 4 and 5, firstly to help segment the empirical analysis of secondary office vacancy in the UK and secondly, to appraise the physical characteristics of agile building intervention. The building era typology helps the researcher benchmark the work of Kincaid (2000, 2002).

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It reveals that the physical characteristics of agile re-use remain the same, however, there is considerable variegation when compared to the respective eras of office building development identified in Chapter 2.

In response to Lausberg (2008, 2010), the concepts of vacancy typology is the first known exposition of commercial office vacancy in sub-optimal situations. This conceptualisation sits alongside the empirical stock appraisal and provides a set of tools to understand its manifestation. Furthermore, the explanation of agile management options in Chapter 5 is the first known articulation of a holistic strategy for managing the incidence of commercial office vacancy. While previous accounts of intervention have concentrated on physical adaptation, the account in this thesis accommodates some of the less tangible (but not less potent) techniques such as demand repositioning and meanwhile use. The application of 'agility', iterated in the previous section, is also the first known use of this concept in property research. Traditional accounts have been centred in project management and organisational studies. Moreover, the delineation of relative intervention scenarios at the end of Chapter 5 is the first known explanation of secondary office re-use potential in relation to the myriad contingent circumstances within which an intervention decision must be made.

1.6.5 Policy Recommendations

Issues of functional tolerance and optionality have gained considerable attention in macroeconomics in relation to exposure to, and exploitation of risk (Taleb, 2007). Yet, they have not been introduced to the study of commercial real estate. Therefore, the policy recommendations contain the first known exposition of an agile re-use perspective based upon functional tolerance and optionality. The policy recommendations are based on four original contributions to literature. First, the introduction of an agile space strategy and appropriate form of Government policy ordinance. Second, the introduction of an agile property grading system that contests the existing Royal Institution of Chartered Surveyors (RICS) Ska rating tool for office fit-out and the Breeam environmental assessment method. Indeed, more than a decade ago Kincaid (2002) indicates that there was a critical gap for such a tool, one still exists. Third, the recommendations describe the first known suggestion of a holistic building valuation and physical appraisal tool which combines Building Information Modelling (BIM) with

methods of financial valuation and intervention. In doing so this recommendation seeks to challenge the myth that buildings always degrade over time in a relatively linear fashion. Fourth, the recommendations set out the first known requirements for the development of holistic project management and education in relation to agile intervention.

1.7 Research Parameters and Limitations of Study

In order to begin to understand commercial office vacancy and its potential re-use, it is necessary to qualify the empirical research in this thesis. This is for seven reasons. First, the wide urban context of the UK study area reveals the need for some cautionary words in relation to the context and content of the findings and conclusions in this thesis. The empirical approach has necessarily been one of broad review rather than detailed analysis, due to the study area size. Consequently, we must be careful of over generalisation and simplification.

Each location in the UK contains a variety of comparable but highly specific real estate markets which are contingent and socially produced in each context. Indeed, we must also be distrustful of simple descriptions of one location and the next, for instance between Central London and the rest of the UK and between primary and secondary office property. It is too simplistic to suggest that one location will be more agile than the next. Rather, it is more accurate to attest that each location will be criss-crossed with pockets of urban development that lend themselves either more or less toward the incidence of vacancy and potential re-use, dependent on the underlying market conditions, the relative mix of supply and demand and the respective viewpoints of relevant property market interests. This thesis concentrates on general conclusions across the UK, a great deal more research will be needed to fully understand the specific nature, scale and location of commercial office vacancy and relative agility in each of the locations appraised in this thesis. Chapter 7 sets out a road map for this research activity.

Second, by focusing on the UK the thesis is Anglo centric in its commercial office market interpretation which will most certainly add a degree of bias to the judgements contained within. In addition, the account of the commercial office industry in this thesis is clearly negative, however, the overall sentiment that the researcher wishes to convey is one of missed opportunity. Consequently, supported by the empirical

findings, the researcher asserts that it is an error to ignore the inherent potential in existing commercial office properties and their potential continuing use. Similarly, the researcher also paints a relatively pessimistic picture of government in the UK since the 2010 Coalition Government. However, in doing so the author does not discount the countless examples of positive public and private sector practice that have been encountered during this research.

Third, it would be churlish to suggest that commercial office property and the institutional environment it operates within, is entirely static. There are plenty of examples of successful building agility, particularly through the recent relaxation of permitted development rights for office to residential conversions. Instead, it is not considered the norm in contrast to traditional practice. Fourth, although the thesis concerns itself with the whole commercial office market, the focus of this thesis is very much the secondary office market. This is because the secondary office market is relatively under explored, in comparison to the traditional prime market and vacancy is most likely to reside in this segment of property. In addition, the focus is exclusively on commercial office property, retail, industrial and residential property is not considered in this study. However, this is not to say that these other types of property are not also subject to vacancy and potential re-use. Indeed, an underlying argument in this thesis is that in response to dynamic changes in the nature of occupier demand there will be increasing fluidity between the respective use classes as functional definitions of property break-down in favour of mixture of use.

Fifth, the thesis does not contain a vacant office building re-use appraisal model like those produced by Kincaid (2002), Remoy (2010), Wilkinson et al (2014) or Langston (2011). These authors, in the main, focused on the physical characteristics of vacancy and adaptation and have not considered the nature, scale and location of vacancy in their respective studies. An underlying contention in this thesis is that commercial office vacancy and its potential re-use can only be considered after first of all contemplating the contingent reality of such vacancy. Rather, the thesis considers the opportunities and challenges in relation to this issue in order to filter the potential ingredients for an agile re-use decision-making model. Responding to this deficit this thesis concludes by suggesting the possibility of integrating these ingredients into a parametric financial appraisal and Building Information Model (BIM). This can be used to consider the various decision options in relation to re-use.

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Furthermore, this study does not engage with Geographic Information Systems (GIS), instead, it makes use of specifically designed info-graphics to depict the geographic situation of commercial office vacancy in the UK. This approach was followed because of the challenge involved in synthesising and meaningfully describing all of the UK study area in a digestible fashion. In doing so it depicts a rich visual alternative to GIS visualisation. However, the opportunity has been taken to ingrain GIS functionality to the multi-attribute commercial office vacancy stock database, revealing the opportunity for geographic modelling and visualisation in individual locations and the development of GIS techniques to depict a national picture of vacancy at a later date. Chapter 7 attests that this is a rich opportunity for further research and exploitation.

Sixth, although the study centres its findings in the international literature, its empirical focus is concentrated the UK. In doing so, certain decisions had to be taken for practical reasons. Early on in the study the decision was taken to omit Central London (with the exception of nearby Croydon) from the secondary office appraisal. This was because all of the recent press attention indicated that the underperforming secondary market did not reside in this location due to its superheated market conditions and position as a global city (Lizieri, 2009).

However, the Delphi study analysis did contain respondents based in Central London. This was unavoidable as many of the industry leaders, in terms of office investment, development and agency, are based in this location and their views were needed in order to create a meaningful national perspective. Encouragingly, the respondents verified the rationale behind this decision, indicating that the secondary market in Central London was entirely different to the rest of the UK.

Furthermore, empty property rate avoidance is a significant issue and one that cannot be revealed in the database methodology used in this research (because the vacancy statistic is based on empty property rates). This means that in all likelihood the vacancy statistic in this thesis is a conservative estimate of commercial office vacancy. Savvy landlords and managing agents are more likely than not to pursue a strategy of empty property rate avoidance. Consequently, it is surprising that there is so much property in the data model. In addition, it was evident early on that public sector property was not well reflected in the data model despite anecdotal evidence that considerable portions of the local government and the further education estate is empty (the Central

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Government estate is reflected in the Epims real estate system which can be accessed by the public) due to widespread rationalisation.

Part of this situation is because these properties are classified as operational (even though actively marketed as commercial opportunities). However, local government also owns and manages significant quantities of commercial premises which were not on the database, indicating the public sector is also engaging in empty property rate avoidance measures. Closely related to empty property rate avoidance but also to general market inefficiency is a more nuanced issue related to 'grey space.' In other words, certain properties may only have a few tenants in a relatively large floor space. To all intents and purposes these properties are vacant, however, the database only reflects entirely vacant properties (the issue of grey space is discussed in further detail in Chapter 4).

Moreover, in setting out to capture this picture, the thesis is reliant upon data and respondent perspectives frozen at a certain point in time. This immediately locks out the changeability of the built environment from this point forward. For instance, since embarking on this research in 2012 (and creating the secondary property database during 2013 and 2014) the English Government has relaxed permitted development rights for office to residential conversion which could have significant impact upon concentrations of secondary office vacancy. The impacts of these changes do not impact the integrity of the empirical data because the data collection took place before the policy changes had a chance to influence potential office-to-residential adaptation. However, the policy change could certainly have an impact on the implications of the research (something discussed in greater detail in Chapters 4, 5 and 6). Yet, despite these caveats, the author is confident that the findings in this thesis give a thorough account of the secondary office phenomena in the UK. Indeed, what these caveats indicate is the complexity involved in developing a commercial real estate statistic that meaningfully reflects the reality of contingent market circumstances.

Seventh, in writing a thesis on a topic which is the daily activity for many practitioners, the author is very cautious in not claiming an unequivocal insight into what is already common practice or inadvertently claiming a unique occurrence as an example of general practice. However, the exposure the research has had to commercial real estate practitioners and the broad range of views (both positive and negative), encourages the confidence that this is not a concern. Indeed, by including the views of surveyors, office

agents, investors, developers, designers, and public sector workers, this thesis provides a methodical account of contemporary practice in the UK which provides some new perspectives, approaches and findings in relation to a key sector in the UK property industry. Yet, it should be noted that, due to the broad nature of enquiry, this thesis does not comprehensively scrutinize in great degree the individual disciplines and techniques of design, surveying, valuation and development appraisal or regulation. Rather than stressing one single facet of secondary vacancy, an attempt is made to layout the holistic interconnections between the respective actors and contingencies involved in secondary office vacancy.

1.8 Structure and Composition of Thesis

Chapter 1 has outlined the analytical process and respective research threads, the motivation for study and the opportunity that vacant secondary office property presents. The theoretical perspective and normative persuasion has been defined and placed within the overall research structure, describing the research aims, objectives and research questions.

Chapter 2 establishes the theoretical and philosophical position of the thesis. It critically evaluates the academic, policy and practice-based literature, revealing the research problems that guide this study. Chapter 2 is split into two sections. First, it sets the context for the study, describing the history of the office, the phenomenon of depreciation and obsolescence and the increasing incidence of office vacancy. Second, the atheoretical nature of commercial office research is challenged with particular emphasis given to constrained information and theoretical perspectives that justify the development of new office properties, whilst ignoring those properties that do not form part of the market clearing process. Chapter 3 describes the adapted methodological framework and process that has been followed. A methodological approach is presented, its use justified and a triangulated mode of enquiry that combines extensive and intensive methodologies is explained. This is followed by a discussion of grounded theory, which has been used to elicit findings from the Delphi exercise, and its suitability in relation to the stratified and emergent theoretical perspective that underpins this thesis. Chapter 3 concludes with a discussion of methodological validity, limitations and originality.

Chapter 4 depicts secondary commercial office vacancy in the UK, portraying its nature, scale and location. Commercial office vacancy is then placed within its relational and contingent context in order to understand the reasons for its manifestation. Chapter 5 appraises the opportunities and challenges involved in the continual use of secondary commercial office vacancy. It focuses in on the economics of agile intervention and the respective building eras identified in Chapter 2 and the contingent circumstances of re-use. This chapter offers a practical guide for those considering a vacant office building intervention. Chapter 6 presents a set of policy recommendations in relation to the amelioration of secondary office vacancy. Chapter 7 concludes the study; it reviews the aims, objectives and research questions and offers conclusions before describing research limitations and opportunities for further research.

1.9 Chapter Summary

Chapter 1 has set out the reasons and motivations for research while elucidating the unexploited opportunity inherent in secondary office vacancy. It has presented the normative persuasion, the philosophical perspective and the analytical strategy. It then went on to illustrate the originality in research and the parameters and limitations of enquiry. The next chapter lays out a history of office development in the UK, the manifestation and invisibility of secondary office vacancy and then an alternative theoretical interpretation.

Chapter 2 Literature Review

2.1 Introduction and Outline of Theoretical Argument

This chapter establishes the theoretical framework for study. The incidence of secondary office vacancy (and indeed the secondary office market in general), has received little critical attention in academic theorising or the respective real estate professional disciplines. One of the most recent appraisals of the commercial office market, Lizieri's *Towers of Capital* (2009), concedes that it does not analyse secondary office property or associated locations. Instead, the research considers global cities and admits that its focus is specifically on prime office property found in international financial centres. This thesis is concerned with the flip side of this situation, the less well-known secondary office market. Indeed, a literature in relation to secondary office property does not exist (Chapter 4 sets out the first known explanation). Therefore, the purpose of this chapter is to trace the emergence of secondary office segmentation and vacancy by setting out a history of offices in the UK and then to reflect upon why the incidence of secondary office vacancy receives so little attention.

In the UK, commercial office research in relation to office vacancy is typically old, based on previous recessionary periods and bases its analysis on a non-critical physical appraisal of office building characteristics. Notable authors include Barlow and Gann (1993, 1996), Kincaid (2000, 2002) and Heath (2001). This emphasis on physical materiality is also reflected in more recent research in Western Europe (Agre, 2005; Remoy, 2010; Remoy and Wilkinson, 2012) and in Australasia (Wilkinson and Read, 2011). The common treatment is to situate the analysis of office vacancy in the depreciation and obsolescence literature (Baum, 1991, 1993; Crosby and Devaney 2006). Broadly speaking, in this perspective, office buildings grow old, become less productive and must then be improved or replaced. A separate tradition of research uses the natural rate of vacancy to reflect on the medium to long-term rental adjustment process (Blank and Winnick, 1953; Voith and Crone, 1988; Crone, 1989; Grenadier, 1995; Sanderson, et al., 2006; Miceli and Sirmans, 2013).

The repercussion of this deficit is that commercial office vacancy is either a physical issue of building design and construction technique or an implicit assumption in econometric abstraction. The recent debates in urban studies in relation to the

contingency of space and place, relationality, social and cultural construction are largely absent from the relatively sparse office vacancy debate.

Without an initial understanding of the nature, scale and location of secondary office vacancy, it is difficult to consider how this situation might be managed or ameliorated in the future. This exposes three underlying research problems which run consecutively and guide the empirical enquiry in this thesis. First, the nature, scale and location of secondary office vacancy is unknown. Second, consequently, it is difficult to address the management of the incidence of secondary vacancy. Third, it is difficult to consider how this situation could be ameliorated in the future.

In order to expose this situation, this chapter first of all lays out the historical evolution of the 'commercial office' in the UK. It draws on the emergence of the office building around the world in the latter part of the 19th Century and then centres this debate in the UK commercial office market. In doing so it gauges the propensity of the commercial office to reflect and change in relation to social, cultural and economic conditions. Moreover, it then considers the later susceptibility toward depreciation, obsolescence, segmentation and vacancy. It relates this to the emergence of the office as a store of wealth, rather than place of business. This situation is overlaid by increasing specification, the use of value engineering and more broadly the increasing changeability of user preference. The output is a typology of building eras which is taken forward to structure empirical results in Chapter 4 and the appraisal of management and potential exploitation in Chapter 5.

This interpretation is followed by a discussion of existing research in relation to depreciation and obsolescence and the management and amelioration of office vacancy. These accounts rarely indicate how buildings were selected for improvement in the first place and do not segment office property into relative types. When typological criteria do exist, it is unclear what methodology was used in their formulation. Although insightful, findings and recommendations are most often based on small and geographically specific property datasets with little consideration afforded to commercial office market conditions.

Why has the secondary office market received so little critical attention in academic debate? It is suggested that there is an invisibility of secondary office vacancy within institutional convention which is recursively reflected in academic debate and the production of the built environment. This argument suggests that constrained

information, geographical prejudice and cognitive bias disguise the incidence of secondary commercial office vacancy in academic discourse and practice. Indeed, the name, 'secondary', gives the game away, denoting an unwanted and unwelcome element in commercial office stock. This is compounded by the arguments of Lehtovuori and Ruoppila (2012) who found that urban policy makers often view vacant properties as economically non-viable, signifying urban ghosts of the past (Colomb, 2012; Henneberry forthcoming in 2016).

Yet, not only is there a deficit in knowledge in relation to the nature, scale and location of vacant secondary office stock, there is also a knowledge gap in relation to how office market actors are reacting to this situation. This is reflective of a general deficit in relation to human behaviour in real estate research, observed decades ago by Simon (1959) and more recently by Guy and Henneberry (2000). The repercussion of these deficits is that it is difficult to reflect upon the perennial tension between rigid and restrictive property forms and the dynamic occupier preferences and social processes that they are designed to accommodate.

Illustrating this situation, Henneberry (forthcoming in 2016) indicates that the vacancy situation is illustrative of a tension between two opposing trends. Firstly, Bishop and Williams (2012) have argued that the modern city has become increasingly permanent through processes of planning, history and building regulation. Second, there has been a surge in vacant property as a result of dynamic change in the nature of occupier demand. This has resulted from socio-economic change such as deindustrialisation, technological improvements and demographic movement (Oswalt and Rieniets, 2006; Bishop and Williams, 2012; Buckholder, 2012).

Taking forward this explanation, the final section of this chapter draws the respective theoretical arguments together and sets out an initial explanation for this situation using Grabher's (1993) treatment of path dependence and 'lock-in'. It describes four interrelated types of 'lock-in' which coalesce and explain the production and silence of secondary office vacancy in the built environment and in commercial real estate research debate and practice. Namely, institutional lock-in, behavioural lock-in, physical lock-in and theoretical lock-in. Throughout the remainder of this thesis, this initial explanation is recursively overlaid with the empirical findings in Chapters 4, 5 and 6. Chapter 7, which concludes the thesis, puts the lid on this interpretation by overlaying this initial explanation with findings from Chapter 4, 5 and 6.

2.2 Context of Study: The History of the Commercial Office

Before setting out on an analysis of secondary office vacancy, it is important to first of all consider the history of the office and how it has changed in recent centuries in order to situate the emergence of secondary office vacancy as a distinct segment of property. This is because,

'The history of office development is bound up with the evolving economy of cities and new technologies'

(Jones, 2013:2).

Yet, the office seems to be going through an identity crisis. It is unclear whether we even need a traditional office anymore when anyone can plug in and work in the nearest Costa, Nero or Starbucks coffee shop. Perhaps the best way to think about an office is where the administration gets done, the location of back office business requirements, where meetings and conversations take place. Using this definition, the skyscraper is the most conspicuous example of the office model but so in the same sense is the Blackberry.

2.2.1 The Emergence of the Office

Pevsner (1976), in his *History of Building Types*, indicates that the first office building was the Uffizi (Ufficio is Italian for office). It was built in the centre of historical Florence between 1560 and 1581 and was designed for the Medici Duke, Cosimo I. The function of the building was to provide government offices for the new State of Tuscany. A little later, in 1729, one of the earliest purpose built offices in the UK was constructed in Leadenhall Street, London, for the East India Company (see Figure 2.1).

Figure 2.1 India House



Indeed, it was during this period that the office building, or more frequently the block, began to emerge in the UK.

Source: Kidsbritanica.com

In the years following 1850, came the first generation of corporate headquarters, commonly for banks, insurers and law firms.

Figure 2.2 The Oriel Chambers, Liverpool



After 1860 regional cities and town centres began to follow the lead of London, typically copying the design principles found in ancient Greece and Rome (see Figure 2.2, 2.3, 2.4 and 2.5).

Source: www.anonw.com

Figure 2.3 Cathedral Buildings, Newcastle upon-Tyne



Source: www.journal.com

Figure 2.4 Manchester and Salford Branch of the Bank of England



Source: Pit-yacher.com

Figure 2.5 The Refuge Assurance Building, Manchester



Source: Rightvenues.com

In Liverpool the Mersey Docks and Harbour Board Building was built in 1911, the Royal Liver Building in 1913, while the Curnard Building was complete in 1916. Together these buildings represent the 'Three Graces' (see Figure 2.6).

Figure 2.6 The Three Graces



Source System-x-info.com

2.2.2 Chicago Steel

It was during this time that the office building began to take functional shape and reflect the prevalent economic conditions of the day. Indeed, Kuang (2009) argues that office design has changed over time in line with the characteristics of occupier demand, illustrating the changing perceptions of openness and privacy and interaction and autonomy. Frederick Taylor is associated with the first generic office designs in the early part of the 20th Century. Broadly speaking this era in design became known as 'Taylorism' and drew inspiration from the traditional factory where workers would be grouped on the office floor and managers co-ordinated work from separate offices. During this time, Frank Lloyd Wright's Larkin Building ushered in what became known as 'white collar factories' (Figure 2.7).

Figure 2.7 The Larkin Building



Source: www.buffalohistory.com

Buildings of the time were generally restricted by the technology and materials available with which to build. In the UK these buildings are often grand in character taking their

inspiration from palaces and the utilitarian mill and are generally narrow, in order to take advantage of natural light (Battle, 2003; Duffy, 1997; Kohn and Katz, 2001). During this time, office buildings were defined and constructed by owner occupiers and generally predated what would become the commercial office market (Battle, 2003). However, many of these buildings still exist in town and city centre locations indicating the inherited nature of the built environment and are likely to be listed or of special historical interest.

In parallel, in North America, the first high-rise buildings and skyscraper developments began to emerge in Chicago and New York taking advantage of the introduction of steel into the construction industry. Figure 2.8 depicts the first skyscraper, the 10 storey 1884 Home Insurance building in Chicago. Legend has it that the designer of the Home Insurance Building, William Le Baron Jenney, first suspected that a steel frame could support this many floors when his wife balanced a heavy book on a small birdcage. An example of the rapid evolution of the skyscraper was the Daniel Burnham designed Flat Iron Building in New York constructed in 1903 (see Figure 2.9). These new skyscraper buildings redefined how we define city centre locations by provoking previously unthinkable urban densities. For instance, the relatively small Chicago Central Business District, The Loop, now had the opportunity to expand upward. This concept was rapidly copied by major towns and cities around the world during the 20th Century.

Figure 2.8 The Home Insurance Building



Source: Arewethereblog.com

Figure 2.9 The Flat Iron Building



Source: Central-nyc.com

Utilising steel meant that less space was needed to ensure structural integrity and enabled the construction of additional floors. This inspired increasingly demanding structural layouts and the design of increasingly ambitious developments (Remoy, 2010). Concurrently, the first safety elevators began to be installed allowing the rapid movement of workers between floors (Kohn and Katz, 2001). In terms of physical construction, both of these developments heralded the beginning of the mass production of the office building.

2.2.3 The Emergence of the Office Market in Europe

However, the mass production of office accommodation did not reach Europe for several decades (during the late 1950s and early 1960s). The empirical findings in Chapter 4 support this contention, vacant pre-war properties are numerous but there is little additional development until the 1960s. Those properties that were developed before 1960 transmitted messages of stability and confidence using materials like Portland Stone and vertical window proportions (Historic England 2014). Figure 2.10 shows the Time and Life Building in Westminster which is an example of this technique.

Figure 2.10 Times and Life Building Westminster



Source: www.budlington.co.uk

The increase in construction during the 1960s can trace its gestation to the rise of the service economy as the dominance of manufacturing diminished. The removal of building licenses in 1954, the lifting of Government controls on development and a

growth in bank lending, created the conditions for a commercial real estate boom (Historic England 2014). From this point onward speculative office building was directed by large financial institutions, Insurance Companies and Pension Funds, such as the recently merged Lloyds, NatWest, Barclays and Midland Banks, seeking to outdo one another and to create mixed property portfolios. At the same time the professional property service sector began to emerge in response to the need for development and conveyance advice. It was during this period that the modern concept of the office market began to coalesce in the UK and the first market information was produced. However, it was also during this period that the tensions between the office as a place of work and property investment began to emerge.

In the 1950s and 1960s new design ideologies began to influence office design such as the 'office landscape' and 'Burolandschaft' pioneered by the Quickborner consultancy in Germany, consisting of free and open plans of office furniture (see Figure 2.11).

Figure 2.11 The Office Landscape



Source: Expandeddesign.org

During this time the office began to be recognised as a medium of communication (Battle 2003) and the Taylorist divide of managers and workers was dissolved. The briefly popular Burolandschaft concept inspired the more widely received and recognisable 'action office' (see Figure 2.12) pioneered by Robert Propst and Herman Miller, resulting in the classic office cubicle (Kuang, 2009).

Figure 2.12 The Action Office



Source: Tobiasrevell.com

Concurrently, mechanical and electrical engineering began to emerge in line with the requirements of the modern office building, which began to facilitate deeper office building designs (Remoy, 2010). Deep office buildings were numerous until the late 1960s when this began to be superseded by narrower profiles in the 1970s as proximity to natural light and workers' rights gained ascendancy. During this time the 'user' and the first notions of worker productivity began to emerge (Battle, 2003; Duffy, 1997) alongside the co-determination movement which moved across Europe as legislation in Germany, the Netherlands, Sweden and Italy gave employees a voice in how companies were managed.

Concurrently, owner development began to recede in influence, while the purchase of office property as an investment and store of wealth gained prominence alongside an established rental market (Jowsey, 2011). Office property was particularly attractive to portfolio investors as an interest rate hedge. Arguably, the professional services and its coterminous office market, which had seen steady growth for half a century, now entered the first construction boom period. During this time the rental market fully established itself and design specifications became more general and

standardised in order to maximise return (a theme returned to throughout the thesis). The most famous office development during this period was the speculatively built Centre Point (currently being converted into luxury apartments) in Central London (see Figure 2.13).

Figure 2.13 Centre Point and Harry Hyams, London



Source: www.telegraph.co.uk

Completed in 1966 by Harry Hyams, who had leased the site for £18,500 per annum for 150 years, the building remained empty for many years as Hyamsspeculated upon and benefited from, increasing property prices as he waited for a sole tenant (the advent of empty property rates can trace its lineage to this building). During this period, office buildings were still generally conceived with one tenant in mind and the 25-30 year lease was common. A certain degree of office vacancy became the norm and to a certain extent was seen as beneficial as 'initial', 'cyclical' and 'frictional' office market vacancy assisted the smooth function of market equilibrium. Initial vacancy describes those properties that

have just entered supply. Frictional vacancy describes those properties temporarily vacant as businesses filter up and down the market, while cyclical vacancy describes those properties that are vacant due to the cyclical movement of the business cycle (Kerris and Koppells, 2006; Lausberg, 2008; Remoy, 2010). The expectation in all three types of vacancy is that they are temporary. Previous to this era, office vacancy did not necessarily exist because office properties were generally constructed either by those, or for those, who would reside in them for the medium to long-term.

Kohn and Katz (2001) indicate that construction techniques were different in North America compared with Western Europe. Centre core buildings are typical in North America, helping them to withstand enormous wind loads. Consequently, enormous vertical constructions are common with the perimeter being opened up for light and panoramic views. In Western Europe side core and multi-core construction are more common. Multi-core designs are the most common as side core designs make fire escape distances difficult to achieve over larger floor areas, however, circulation can be more problematic due the increased number of vertical structures (Kohn and Katz, 2001).

2.2.4 Office Specification

In the 1960s the curtain wall began to appear and take ascendancy with the advent of 'modernism.' Le Corbusiers 'Domino Plan' concepts of the 'City in the Sky' alongside the work of Mies Van der Rohe and the "Internationalist school" took root (Remoy, 2010). Buildings and whole areas were planned and rationalised under the influence of ideological movements such as "new modernism" and "brutalism" (Banham, 1966). Rational grid structures, modular cladding and lots of single-glazed glass were the norm of the day. However, although a time of great innovation buildings associated with the 1960s and 1970s have received criticism (HEFCE, 2008). New materials, many of which were developed during WW2 were not tested and have not always stood the test of time. Proceeding chapters will indicate that some of the design decisions taken during this period have had restrictive consequences for potential re-use measures. For instance, some of the earliest building in the 1960s were constructed with low floor to ceiling heights (just before M & E considerations emerged as a fundamental design consideration) which do not facilitate easy retrofitting regarding ductwork, pipes, cables, wiring and lighting (HEFCE, 2008; Barlow and Gann, 1993).

Furthermore, although curtain walling was an important step forward it could be susceptible to water ingress. Moreover, the use of inappropriate materials could result in oxidation, the abundance of single plain glass did not support energy efficiency and the use of hazardous materials like asbestos was common (HEFCE, 2008). Consequently, such buildings are difficult to heat in the winter and suffer from excess solar gain in the summertime. Buildings constructed during this period, characterised by the earliest M & E specification, are inherently unintelligent. They can only be switched on and off. As a result, they have high energy costs and excessive carbon footprints which are in turn associated with occupier stress and discomfort (HEFCE, 2008).

Office buildings in the 1960s and 1970s were generally constructed from heavyweight concrete frames around cellular space. Flexible re-uses in the future was generally not part of the intentional design brief (see for instance the heavily fortified Bank House in Leeds, built between 1969 and 1971, the futuristic Mea House in Newcastle, built in 1973 and Alpha Tower in Birmingham, built between 1970-72).

Figure 2.14 **Bank House**



Source: Yorkshireeveningpost.co.uk

Figure 2.15 **Mea House**



Source: c20society.org.uk

Figure 2.16 **Alpha Tower**



Source: Manchesterhistory.net

Chapter 5 will argue that although buildings constructed during this era have significant issues, not least their aggressive exteriors, they can still be re-used. This is because even though these buildings were not constructed with re-use in mind, the technology was not yet available to construct these buildings to minimum cost. The consequence is significant design tolerance which can be exploited during re-use intervention. As the 1970s progressed, office construction began to consider comfort heating and cooling and therefore became more reliant on artificial lighting and cooling. Consequently, the outer skins of buildings became more accustomed to cladding, rather than glazing, in order to focus on internal environments.

2.2.5 The Out of Town Office Park

In the 1970s, Silicon Valley emerged in California and heralded the emergence of the out of town office park. Stockley Park was the first architecturally driven office park in the UK, master planned in the early 1980s by Foster + Partners. These developments were typically cheaper to construct, compared with Central Business District (CBD) areas, and offered the opportunity of expansion space. Furthermore, the development of the motorway network stimulated developments in locations like the M4 corridor of high technology which stretched from London to Wales, connecting Slough, Reading, Newbury, Swindon and Bristol (Historic England, 2014). However, these changes were also, in part, driven by Government policy which began to affect the location of office development. For instance, several years earlier, in order to put a block on office development in Central London, the UK Government had introduced the 'Brown Ban' on London offices. From 1964 onward, any new development over 25,000 sqft required an Office Development Permit (Jowsey, 2011). In 1966 the ODP programme was extended to the whole of the South East and a large part of the Midlands and was not removed until 1979 (Historic England, 2014). A Location of Offices Bureau was even set up to direct the relocation of exiting business from Central London (Historic England, 2014). During this time, the Regent Centre Development by North British Properties, was the biggest office development in Europe (Figure 2.17 shows the original British Properties advert and Figure 2.18 shows it now), constructed on a brownfield site on the periphery of Newcastle city centre.

Figure 2.17 **Regent Centre in Newcastle (1960's)**



Source: British Properties Advert

Figure 2.18 **Regent Centre (present day)**



(Source: Authors own)

In the 1970s speculative investment and development was entrenched, commercial property was now part of the overall economic apparatus and formed large chunks of insurance and pension portfolios. However, market integration exposed commercial

office property to inflation and stagflation. Consequently, interest rates hikes resulted in the first office property value decreases. The result was reduced confidence in perpetual rent increase and institutions stopped buying commercial office property. This was the first example of a major boom and bust in UK commercial real estate market (Jowsey, 2011). Towards the end of the 1970s office property construction was increasingly market driven. Specification began to increase in line with technological requirements as did standardisation and minimum cost production methods. It can be contended that many of the present difficulties in relation to the re-use of vacant secondary office properties can be traced to processes introduced during this period. Even though 'long life' and 'loose fit' architectural principles were in vogue during the 1960s and early part of the 1970s they were rarely applied to office developments. This was because office building construction was now being driven by the expectations of rapid economic growth in the short-term and buoyant rental markets in the future, as real estate developers and investors took over office construction from owner occupiers. In response to this situation, architects began working on concepts of standardisation and conformity. This 'cockpit' based architecture, where buildings were tight fitting with space for only one use became the common construction output from the 1970s onwards (Remoy, 2010). As Brand (1994) attests, low cost and short building life spans resulted in office buildings that simply did not work in the medium to long-term.

Illustrating this situation, Agre (2005), based on research in Norway, argues that owner occupiers are more likely to employ a longer term perspective to building design in order to protect their investment, while investors (especially the larger institutional investors) have no such need and employ a short-term perspective in relation to investment return, rapidly followed by strategies of disposal. Chapter 4, 5 and 6 will attest that the fugacious short-term design, build and sell perspective of the office construction industry (characterised by pump and dump) is one of the main causes of the current secondary office space overhang and one of main barriers to its management through agile re-use.

2.2.6 A City Within the City

In the early part of the 1980s institutions once again began to purchase commercial office properties, while occupier demand rapidly increased in the midpoint of the decade

(Jowsey, 2011). One of the most famous exponents of the new breed of speculative office building is the 1984 1-3 Finsbury Avenue, part of the Broadgate development in Central London (recently Grade 2 listed).

Figure 2.19 **1-3 Finsbury Avenue (Broadgate), London**



Source: www.broadgate.co.uk

This type of development emerged in response to a Western European design tradition, namely the idea of the office building as a city within the city. The 1985 SAS headquarters in Stockholm is an example of this concept (see Figure 2.20). During this time office developments, although fundamentally located in the city and in close proximity to transport infrastructures and local amenities, were separated from the rest of the city. These developments often had their own restaurant facilities and gyms and fulfilled the vision of an independent city within the city.

Figure 2.20 SAS Headquarters Stockholm



Source: www.nielstorp.no



Source: www.alamy.com

During this period, planning zones were relaxed and the Building Uses Class Order was introduced to lend some consistency to the planning of commercial real estate development. The 1987 Town and Country Planning (Use Classes) Order placed uses of land and buildings into various categories known as 'Use Classes.' This order is periodically amended, but the general convention is that planning permission is needed to change from one class of use to another. During this time car-based planning, out of town working and the rise of the office park really started to accelerate and the sheer size of development projects increased as the office (worker) decentralised and moved away from the city. Once again, due to changing economic conditions, office property became less attractive to institutional finance and banks took over the financing of development instead amidst financial deregulation and liberalized capital (Jowsey, 2011).

Furthermore, the 1980s saw the first 'managed' and 'intelligent' buildings, and facilities management began to emerge as a recognised discipline (Battle, 2003) alongside the now established pursuit of office agency. Toward the end of the 1980s the computer was a common sight in office buildings which necessitated new mechanical

and electrical solutions, (cabling, trunking, server support) and recognition of the importance of indoor climate control (Remoy, 2010). Arguably office buildings were previously only needed to cater for desks and chairs in various configurations. The advent of ICT changed this and began to allow for the automation of previously human tasks. Consequently, fewer workers were needed, and by extension, less space (Kincaid, 2002). It is important to note that buildings created during this period are not necessarily better than those that went before. Floor plates were generally shallow, which can be associated with limited service distribution options, and properties were built quicker and cheaper and insulation was often suspect (Botti, 2012). This point is corroborated by research participants in Chapter 4 and 5 who indicate that buildings constructed during this era constitute some of the worst parts of commercial office stock and are difficult to renew.

Previous eras of construction were built to last quite literally forever and had generous amounts of functional tolerance (either intentionally or due to inferior construction practices). These new buildings were built at least cost and maximum rate of return. Illustrating the pace of change, the ICT revolution was relatively quick. Consequently, those office buildings previously considered prime just before the emergence of ICT, became functionally obsolete within just a few years.

The separation of prime and secondary office property can be traced to this period. This occurred as the distinction between useful and obsolete, due to rapid technological change, worker rights and rapid physical depreciation, segmented the commercial office market. Speculative development was still common during this period, hinging on the expectation that in time tenants would be found to fill newly built accommodation. It can be contended that this period began to create the first large scale office vacancy, and with hindsight, displacement (Greenhalgh, 2006) as supply began to outstrip demand and tenants were faced with an abundant choice of supply.

During the 1990s, ICT expanded into the internet age, culminating at the end of the decade with the .com collapse. Information technology revolutionised the office process in terms of technology need, building design, interior, culture and heralded the first notion of the 'virtual office' (Battle 2003). Mobile phones, laptops, internet and email severed the connection between office and worker and the 'hotdesk' became a common occurrence (Remoy, 2010). Botti (2012) refers to buildings developed during this period as the emergence of 'prestige' office buildings focusing on the working

environment. High thermal mass was considered in design and buildings were often long and narrow with central atriums to maximise daylight and natural ventilation. Thermal mass is utilised through exposed concrete floor slabs alongside under floor and natural ventilation (Botti, 2012). Such buildings are those most likely to be seen in modern business parks (see Figure 2.21) and are arguably made distinctive by their ample floor plates, large windows, professional finish, attractive entrances, some attractive public space, well equipped bathroom and restaurant facilities and large floor to ceiling heights.

Figure 2.21 **Carina House, Milton Keynes**



Source: www.rightmove.co.uk

2.2.7 Premium Differentiation

During the latter part of the 1990s and early 2000s office buildings became increasingly friendly to the environment amidst the wider societal concern with sustainability. Air conditioning, often incorporating economizer cycles to optimize cool internal conditions, became the norm in new construction while servicing systems increasingly had the capacity to be altered by facility operators (Botti 2012). Water boilers were now more efficient as steam boilers had been phased out and low emissivity glazing was the norm alongside the consideration of site based solar and wind factors. After 2000, there was recognition in the field of architecture that office space was grossly underused and that physical design had a direct association with office culture and health (Battle, 2003).

Sustainability established itself as key requirement in office building design and use during this period. Figure 2.22 depicts 1 Angel Square in Manchester which is an example of a Breeam excellent office building.

Figure 2.22 The Co-operative head Quarters (1 Angel Square)



Source: Architectsjournal.co.uk

Since the Millennium there has been a gradual but consistent tightening of regulatory standards regarding efficiency and embodied energy. Indeed, the recent Energy Act in the UK (2011) will soon make it illegal to let certain commercial office buildings below an EPC energy rating of E (the regulations come into effect in 2018). As such it can be argued that this era can be characterised as the 'sustainable' era. Concurrently, agile working, hot-desking and out-sourcing became the norm, leading to the requirement for less office space in certain circumstances (Lizieri, 2009). The quantity of office vacancy continued to rise as companies wanted less (better) space and increasingly on their own terms (see Chapter 4). In order to counter the incidence of commercial building vacancy, in 2008 the then Labour Government introduced empty property rates (EPR) in England and Wales (but not Scotland) coinciding with the 2007 credit crunch and consequent recession. However, rather than forcing landlords to bring empty properties back into use, the policy led to innovative avoidance measures including meanwhile use,

exemption strategies (for instance through charitable occupation), false companies and temporary storage, selective demolition and delays in re-development. At the same time new property continued to be built due to the cheap cost of borrowing following the early decade .com crash alongside strong private investment and government incentives such as Enterprise Zones (Jowsey, 2011). An example of this is the Cobalt office development in North Tyneside, built out over the last ten years. Once again this scheme gave the North East of England the biggest office park in Europe for the second time in 30 years

Figure 2.23 **Cobalt Business Park**



Source: Cobaltpark.co.uk

This fuelled a market of abundance and replacement. Secondary property became increasingly difficult to let. Exacerbating this situation, in 2008, the international recession began to take hold leading to large scale private and public sector property rationalisation strategies. Indeed, a public sector contribution toward the British Council of Offices (2012) report 'Change for the Good,' stated that the need for office space could reduce by up to 50% over the next 5 years.

Echoing the focus of Lizieri (2009), Hammond (2013a) contended that,

'Europe can be neatly divided into two markets: a few big business centres, such as London, Paris and Frankfurt, and everything else. It is a crude demarcation,

but one that investors are increasingly using to define what is prime and what is not.'

Concurrently,

'The demand for commercial property of all types had diminished with the contracting western economies and labour markets. At its worst, some secondary property is valueless, worth only the land under it less the cost of dismantling'

(Hammond, Financial Times 11th March 2013).

Indeed, outside of the main trading areas, secondary office property interests neither institutional investors nor bank lenders. In the future secondary office property will only attract finance if it can be adapted for alternative use (Hammond, 2013). However, suggesting the transitory nature of secondary office vacancy explicated in proceeding chapters, this situation is not entirely bifurcated. Richards (2013) argues,






'We have moved from a bipolar to tri-polar market. For the past two years, the market was black and white. Put simply, people wanted to invest in prime and avoid the greater risk of secondary assets. However, while we expect prime assets to remain in strong demand, we see a grey area arising from a split within secondary, between those assets that have the potential to become prime through investment or repositioning and those that do not'

(Richards quoted in the Financial Times, 11th March 2013).

2.2.8 Determining Eras of Development

The preceding history of office building evolution has enabled the delineation of six discernible eras of office construction. These eras of development display the effect of occupier demand, economic change, technological improvement, government policy and the practices of design and construction, all of which coalesce to stimulate, colour and delineate clear segments of commercial office development. Figure 2.24 describes this situation,

Figure 2.24 Eras of development

Building Eras		
Pre War	Post War	1960/1970's
		
1980's	1990's	2000's
		

For the purposes of reference, the pre-war period accounts for the first era of office market construction around the turn of the 20th Century. The post-war period reflects the 15-year period immediately following World War 2. The 1960s and 1970s period accounts for the second explosion in commercial office space construction, including the modernist period during the 1960s and the move toward standardisation in the 1970s. The 1980s era covers the era of large scale speculative development, low cost construction and the emergence of ICT infrastructure. The 1990s period accounts for the prestige era of development as office developers began to recognise some of the failures in the 1980s cost efficiency development models and also began to seek market differentiation through increased specification. While the period beginning with the Millennium and continuing into the present day accounts for the turn toward sustainable construction and the increased prominence given to the environment.

The typology is broad in nature and does not claim to represent an authoritative account of commercial office development paradigms, this would take a great deal of additional research and will likely vary significantly between contingent location due to historical evolution (Chapter 7 argues that this is rich area for additional analysis). However, this typology does provide a basis upon which to structure empirical research and is taken forward into Chapter 4 where it is used to segment secondary office vacancy into eras in the UK. These findings are then taken on into Chapter 5 where they are used in combination with a building criteria checklist devised by Barlow and Gann (1996) and Kincaid (2002) to consider the opportunities and challenges associated with different building eras.

2.2.9 Office History Postscript: The Return of the White Collar Factory

Recently, what was once considered attractive in office buildings has begun to be recast. Increasingly small businesses and creative industries are looking for 'retro cool' over corporate specification. In certain circumstances this has even led to speculative secondary office development. Illustrating this situation, and echoing the Larkin Building, Derwent London have come full circle with their White Collar Factory development (Figure 2.25), taking inspiration from the 'white collar factories' in the early part of the 20th Century.

Figure 2.25 The White Collar Factory



Source: DerwentLondon.com

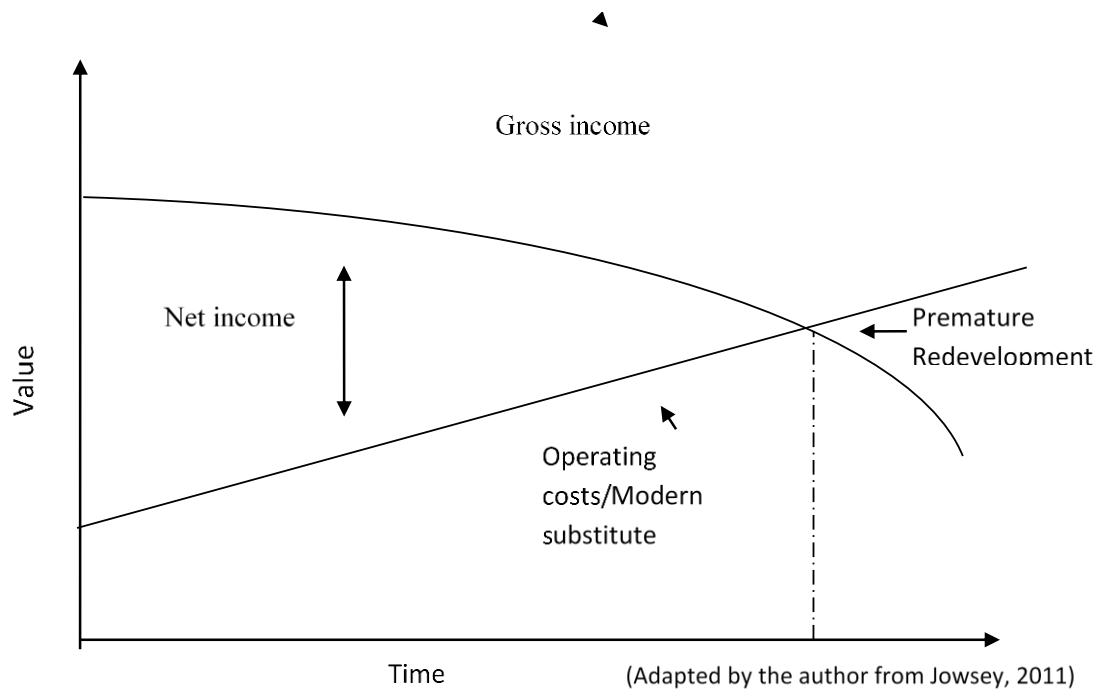
However, proceeding chapters will reveal that speculative secondary office development is hardly the norm and has only taken place in the superheated Central London office markets. The researcher has already argued that a certain degree of vacancy aids the smooth operation of the commercial office market. However, Henneberry (forthcoming in 2016) indicates that a recent problem faced by contemporary cities is the surge in vacant and derelict land and buildings (which has provoked this research). Reflecting this situation, outside of Central London, it is increasingly apparent that large segments of secondary commercial office stock are underutilized and vacant.

In response to the reflective question in Section 2.1, as the needs of occupier demand have changed, as a consequence of political, economic and social change (at once increasingly diverse and mobile), commercial office supply has not kept pace with dynamic occupier demand. Indeed, Henneberry (forthcoming in 2016) argues that, physical, social, economic, political, institutional and cultural factors have frequently caused inertia between one use and the next. The proceeding sections of this chapter question this situation, in relation to commercial office property, by first of all reflecting upon research into depreciation, obsolescence and adaptive re-use. It then moves on to consider constrained information and the absence of research into human behaviour.

2.3 Depreciation and Obsolescence

Historically, commercial office vacancy has received most explicit attention through the analysis of building depreciation and obsolescence. However, this reflection has only considered that each office building over time has the potential to become vacant and must therefore be considered for redevelopment when the economics of redevelopment suggest that this is prudent. Figure 2.26 (based on Jowsey, 2011) describes this situation.

Figure 2.26 Economic Life of a Building



Indeed, Bryson (1997) indicates that office buildings depreciate over time and their rental levels drop. Without continuous refurbishment the return on a building becomes so low that complete redevelopment must be considered. However, validating the rationale for this research, the nature, scale and location of this vacancy is rarely considered, nor the range of potential management options, or the types of office buildings that are most suited to re-use.

Remoy (2010) has supplied a general definition for persistent office vacancy, 'structural vacancy,' where an office building must have been vacant for three years with no prospect of re-let. However, beyond this definition, there is little conceptual consistency or finer detail in relation to vacant office property. Indeed, Lausberg (2008, 2012) argues that traditional methods of appraisal do not account for structurally vacant office properties because they are based upon the assumption that these office buildings will be fully let again after a period of inactivity (for instance when the market rebounds). Wincott (1997) and Lausberg (2012) both argue that it is very difficult to adapt existing valuation appraisal methods, based on market equilibrium, for sub-optimal vacancy. Echoing the arguments of Anglyn (2005), Schiltz (2006) contends that valuers face major difficulties in accounting for vacancy because the variability of outcomes is exponentially more complicated than for let properties. The major problem is that,

'Distressed real estate may suffer from a myriad of problems including market issues, capital availability, property-specific issues, and incompetent or undercapitalized ownership or management'

Schiltz (2006:35).

Summarising this situation, Lausberg (2008) indicates that it is relatively easy to estimate natural vacancy (associated with initial, cyclical and frictional vacancy) from available market data. However, he indicates that there is a knowledge deficit in relation to structural vacancies, which he generally equates with obsolescence and location. He argues that not understanding this situation places commercial office property and associated locations at significant risk.

Remoy (2010) usefully summarises research into obsolescence into seven key strands. Summarising the work of Nutt et al (1976), Baum (1991), Salway (1987) and Blackstand (2001) she identifies the following types of office obsolescence;

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- Aesthetic: obsolescence resulting from outdated appearance
- Functional obsolescence: resulting from changing ways of working
- Legal obsolescence: resulting from changes in legislation,
- Tenure obsolescence: resulting in disagreements between landlord and occupier
- Structural (physical) obsolescence: resulting from building deterioration
- Financial obsolescence: resulting in mis-balance between cost and benefit
- Environmental obsolescence: resulting from environmental change (fine dust etc)
- Locational (economic) obsolescence: building is in a location that has no relationship with demand
- Site obsolescence: resulting from mis-balance between site value and building value.

Baum (1993) indicates that obsolescence is a result of changing and qualitatively increasing user demands and deteriorating conditions of supply. Illustrating this situation Bryson (1997:1444) argues that,

'Every new building undergoes a spiralling process of obsolescence as alterations in the organisation of work patterns, industrial production technologies and building construction techniques occur. The turnover time of capital fixed within the built environment has escalated with the increasing speed of economic transformation. In fact, as soon as a building is completed its obsolescence clock begins to tick.'

Indeed, Lambert Smith Hampton (2013) indicate that locational, functional and physical obsolescence has resulted in 27% of UK office property stock being obsolete. The implication is that there is too much low quality, obsolete space in the UK as demand for office space undergoes major structural change (Chapter 7 concludes that this is likely a conservative estimate). They explain that it is possible for a company with 200,000 sqft

of space to upgrade and reduce their space allocation by 20-40% (this suggests the potential impact of grey space which is expanded upon further in Chapter 4 and 7).

Justifying the research focus, the Jones Lang Lasalle Office 2020 research programme indicates that building obsolescence will accelerate and become one of the biggest issues for the office market in Europe but that this will also be an opportunity for the shrewd (JLL, 2013). This latter point is expanded upon in Chapter 5 where it is argued that secondary office vacancy is not only a drain on resources but can also be successfully exploited.

For some theorists, depreciation, redundancy and obsolescence are a natural facet of the economic system as capital continually switches and moves in search of new profit making opportunities. Bryson (1997) and Baum (1991) both argue that in contrast to most forms of investment, all buildings deteriorate and eventually become obsolete without some kind of intervention. Indeed, depreciation, obsolescence and ultimately office vacancy is not new. Its potential has existed since the development of the first office building. Over time these buildings are worth less in comparison to new buildings, exhibiting lower use value. In order to remain competitive such buildings require constant investment. In time rental levels drop, eventually culminating in critical decision making regarding redevelopment. Illustrating this situation, there are a variety of informative applied depreciation studies, such as Dixon et al (1999), Baum and McElhinney (1997), Dunse and Jones (2002), Andrew and Pitt (2006), Crosby and Devaney (2011) and Mansfield (2009). However, Chapter 4 indicates that what is new are the drivers for, and the speed with which, this issue is taking place. Almost 20 years ago Bryson (1997:1443) presciently argued,

'As the economy changes more rapidly, so too does the need for new forms of buildings, and transformations to the existing building stock of the city.'

Mansfield (2009) argues that depreciation is a consequence of two negative effects, physical deterioration and obsolescence. The first is property specific and therefore relatively easy to predict and manage. The second is contextual, unpredictable and therefore potentially impossible to address. The body of this thesis (particularly Chapter 4) reflects upon this contention and centres a physical appreciation of secondary office vacancy within a wider appreciation of the contingent factors of secondary office

vacancy. In doing so, it contests the latter point of Mansfield (2009), by arguing that new office development should be constructed with inbuilt 'optionality' (Taleb, 2007) in order to address and exploit the opportunity of uncertainty (see Chapter 6).

Echoing the reflections of Bryson (2009) and predicting the building era typology set out in Section 2.2.8 and the theoretical re-description in Section 2.8, Ball (2003:173) poses the following question,

'Do the office building booms of the past help to stimulate rebuilding cycles at later dates? This question seems increasingly pertinent as the office building booms of recent decades recede into the past. Existing offices are bunched into vintages and they become obsolescent in large cohorts as they age.'

The empirical findings in Chapter 4 and 5 suggest that the Ball (2003) speculation is to a certain extent prescient, except the findings from this research suggest that certain building vintages lend themselves to continual re-use more so than others (see Chapter 5).

To a certain extent this is reflected in the arguments of Baum (1991, 1993) who contended that methods employed to manage the built environment determine which properties are most likely to suffer from long-term vacancy. He contends that all buildings in time will depreciate and ultimately become obsolete but importantly this does not always happen at the same rate. Suggesting the variegated and contextual nature of secondary office vacancy and its potential management and amelioration (Chapters 4, 5 and 6), he iterates that quality has a stronger correlation with depreciation than a simple factor of age. He argues that though all buildings deteriorate and become obsolete over time, not all buildings deteriorate with the same speed. The observations of research participants in Chapter 4 confirm that this observation is correct. However, participants indicate that the situation is also reflective of context specific contingencies emanating from social, economic, political, institutional and cultural facets of human behavior.

2.4 The Human Deficit

The contingent nature of context specific human behaviour is generally missing from debate in relation to secondary office vacancy. Lizieri (2009:91) argues that this is surprising,

'Although real estate researchers protest, demand for space is essentially a derived demand. Commercial real estate exists because business users require physical space in which to operate.'

The same author goes on to argue that,

'While this is self-evident, it sometimes gets lost in real estate research, with its twin focus on development and on investment activity. It can seem to be forgotten by investment and development professionals, too, as forecasts of rental growth seem divorced from any consideration of demand drivers. Ultimately it is the demand for space that drives office rent'

(Lizieri, 2009:91).

The result is that not only is there a deficit in relation to the physical nature, scale and location of secondary office vacancy, there is also deficit in relation to the contingent production and reaction to the same situation. This situation is reflected in wider criticisms of neo-classical economics and real estate studies which often ignores the costs and frustrations that customers, investors and decision makers face when considering secondary office property (Guy and Henneberry, 2000; Maclellan and O'Sullivan, 2012). Instead, reliance is placed upon,

'Spatial and behavioural simplifications that allow a focus on market level, and wider, emergent price and output equilibria. Arguably these microeconomic models are not designed as frameworks for exploring real, individual behaviours, nor do they embrace temporal or spatial influences that interfere with the generation and distribution of market signals. Essentially

they act as a stylised basis for exploring the implications of well-functioning price systems'

(MacLennan & O'Sullivan, 2012:327).

Therefore, the challenge for this research is first of all developing a stock appraisal of secondary office vacancy and then grounding this physical analysis in an appreciation of the social, political, institutional and cultural production of secondary office vacancy and its potential management and amelioration. Kincaid (2000:156) illustrates this argument with powerful sentiment,

'By not examining the demand side of the equation we may be putting ourselves in the position of mere spectators who see the output of economic activity while having no understanding of what is necessary to the input. This is a poor position from which to make policy and a near impossible position from which to choose the particulars of the physical make-up and configuration of the built environment.'

In response to this challenge, Chapter 3 sets out a methodological framework for understanding both sides of this equation.

2.5 Managing the Incidence of Vacancy

Attempts to manage the incidence of office vacancy have primarily focused on Mansfield's (2009) former point, that of physical depreciation. The following section reflects upon this situation by appraising the literature in relation to adaptive re-use. In conclusion, this section reveals a reliance on physical analysis associated with building surveying and architecture. Although insightful, these appraisals neglect the wider appraisal of the contingent socio-economic circumstances.

One way of managing office vacancy is to adapt them either through within or between use adaptation (Kincaid, 2002; Ellison and Sayce, 2007). Markus (1979) and Mansfield (2002) attest the terminology associated with maintenance, refurbishment, retrofit and adaptation is numerous, ambiguous and colloquial. According to Brooker and

Stone (2004) the term has been used interchangeably with the terms 'remodelling', 'conversion', 're-working', 'rehabilitation' and 'refurbishment'. The most widely used definition is provided by Douglas (2006:14). He contends that adaptive re-use incorporates,

'Any work to a building over and above maintenance to change its capacity, function or performance. In other words, any iteration to adjust, reverse or upgrade a building to suit new conditions or requirements.'

Examples of adaptive re-use are evidenced in Western Europe, North America, Asia and Australasia, typically in either central urban areas or downtown locations (Bullen and Love, 2009; Bryson, 1997; Ravenscroft et al., 2000; Birch, 2002; Hamnett, 2003; Beauegard, 2005; Gallant, 2005; Remoy, 2010; Remoy and Wilkinson, 2012; Langston 2007, 2011; Langston et al., 2008; Wilkinson et al., 2014; Barlow and Gann, 1993; Coupland and Marsh, 1998; Heath, 2001; Kincaid 2000, 2002).

To date, academic literature has been dominated by physical building assessments. For instance, Barlow and Gann (1993, 1996), Kincaid (2000, 2002), Douglass (2006), Remoy (2010), Wilkinson et al (2014), Geraedts and Van Der Vordt (2003, 2007) have all developed physical building criteria checklists in order to measure vacancy risk and re-use potential. The typical finding is that lack of flexibility, particularly restrictive internal configuration, is the major factor in office building depreciation, obsolescence vacancy and potential re-use. This physical focus can be related to the architectural tradition of typologies and the relationship between type and form. Appendix 1 (adapted from Wilkinson and Remoy 2011) ably describes this physical focus in relation to office vacancy and adaptation and the dearth in relation to demand analysis, where only Kincaid (2000, 2002) and Ball (2002) figure prominently with explicit assessments.

Illustrating this situation, Plevoets and Van Cleempoel (2011) argue that critical appraisals of adaptive re-use are rare and relatively atheoretical. Justifying the focus of enquiry on office stock, Plevoets and Van Cleempoel (2011) go on to argue that industrial and residential buildings and churches have received the most academic attention in relation to adaptive re-use but that business premises have received less

emphasis, while Giebeler et al (2009) and Rabun and Kelso (2009) have called for a critical, multi-disciplinary focus on adaptive re-use.

The first appraisal of adaptive re-use was a special issue on the topic in the *Architectural Review* in 1972 and a consequent book three years later titled 'New Uses for Old Buildings'. The Typological approach was first deployed by Cantacuzino (1975) and has since been used by Douglas (1996), Remoy (2010) and is typically organized around building category or type, following a literary essay into the reasons for building vacancy. Others have followed a technical strategy focusing on the pragmatic means of altering a building. Examples include Highfield (1987) Barlow and Gann (1995) and to a certain extent Kincaid (2000, 2002). The Strategic approach encompasses the work of Robert (1989) who presents seven types of adaptation, 'building within', 'building over', 'building around', 'building alongside', 'recycling materials or vestiges', 'adapting to a new function', and 'building in the style of.'

The same approach is suggested in the work of Kincaid (2000, 2002). Reflecting on the 1990s recession, Kincaid (2002:10-12) suggested 6 basic options for vacant office buildings:

- 1 (Market): Not associated with physical undertakings, rather introduction of tenant incentives schemes in order to provoke purchase or rent.
- 2 (Leave vacant): Mothball and wait until the market recovers, potentially stripping out the building to shell in order to reduce tax liabilities and in preparation for rehabilitation.
- 3 (Refurbish): Improving the building within current use to improve chances of rent or purchase
- 4 (Modification of use): Still within original use modify building to accommodate different types of occupancy.
- 5 (Change use class): Adapt building to new or mixed use class
- 6 (Demolish): Redevelop or sell the site

Jager (2010) consolidates this approach and presents a simpler set of interventions, 'addition', 'transformation', and 'conversion.' All of these interventions are still physical,

however, the strategic approach begins to suggest a spectrum of possible interventions and therefore the possibility of a sequential, rather than static formulation of intervention (see Chapter 5 for an exposition of this approach).

Continuing the emphasis on physical appraisal, Boyd et al (1993), Swallow (1997), Snyder (2005) and Kersting (2006) indicate that successful building adaptation is dependent on the physical condition and location of the office building in question. Reflecting this situation, Gann and Barlow (1995 (and later adopted by Kincaid 2000, 2002) indicate that there are seven main physical characteristics that determine whether a vacant office building can be successfully re-used:

- 1) The size, height and depth of a building
- 2) The type of building structure
- 3) The building envelope and cladding
- 4) Its internal space, layout and access
- 5) The building services
- 6) The provision for acoustic separation
- 7) Fire safety measures and means of escape

Recent work has begun to recognise this partial perspective. Wilkinson et al (2014) and Remoy (2010) discuss non-physical factors such as regulation and legality, government incentives, environmentalism, risk, sociology, economic considerations, costs and location and site. However, these considerations have predominantly only been examined through literature review (rather than empirical analysis) and rarely touch on the causes of commercial office vacancy. Therefore, these appraisals often appear ancillary to the main physical research endeavour. A notable exception to the physical approach is the work of Agre (2005:119) in Norway, who displays an approach cognisant of both supply and demand characteristics,

'During the past years, the importance of adaptability in office buildings has increased, due to many factors: rapid change and churn in both private and public organisations, new ways of working asking for more innovative and flexible work place designs, high rebuilding costs due to changing user demands and more focus on the environmental costs and effects of obsolescence.'

Chapter 5 responds to this deficit and uses a Delphi enquiry of office market actors to benchmark the typology set out by Barlow and Gann (2005) and Kincaid (2000, 2002) against the eras of office building set out in Section 2.2.8.

2.6 Accounting for Vacancy: The Data Deficit

The previous sections of this chapter have detailed the evolution of the commercial office market and the subsequent emergence of commercial office vacancy. It has then argued that analysis of this situation (and its potential management and amelioration) is often physical in emphasis and ignores human behaviour. In addition, the analysis of depreciation and obsolescence indicates that the incidence of vacancy is often taken for granted, rather than explicitly analysed. This section unpacks this situation and argues that there is a general invisibility of secondary office vacancy within the office market institutional environment, which is then reflected in academic debate, practice and the production of the built environment. The argument that is presented suggests that constrained information, combined with cognitive bias, disguises the incidence of secondary commercial office vacancy in academic discourse and practice.

Illustrating this position, Stigler (1961:215) argues that,

'One should hardly have to tell academicians that information is a valuable resource: knowledge is power. And yet it occupies a slum dwelling in the town of economics.'

This argument can be extended to the realm of commercial real estate research. Indeed, vacant office market intelligence is rare in the UK, local authorities rely on intermittent employment land and premises surveys, the private sector utilises market estimates prepared for marketing purposes, while Central Government uses dated and ambiguous evidence. Office vacancy is generally little more than best estimation or informed guess.

Traditionally it has been difficult to create a reliable evidence base that articulates office vacancy in the UK or a model that indicates its typological characteristics. Indeed, the inverse relationship between complex property markets and the data available to analyse them has been well defined (Currie and Scott, 1991; Myers and Wyatt, 2004;

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Fuerst et al., 2011; Myers and Wyatt, 2004; Katyoka and Wyatt, 2008). Evidence based systems are generally dated and associated with previous recessionary periods and designed primarily for other purposes (Katyoka and Wyatt, 2008; DCLG, 2006). Moreover, Myers and Wyatt (2004) argued that government systems often exacerbate the problem of measuring vacancy, with data never collated to evidence the complete picture.

Fuerst et al (2011) indicate that commercial real estate datasets are few and far between, are generally sample based and rarely primary, relying on aggregated location or market-sector data. Indeed, they argue that the commercial real estate industry has limited information on the overall UK stock,

'There is no dataset that records the floor space occupied by business premises in the UK. Frequently, inferences have to be made from samples. Given the heterogeneity of property, it may be inappropriate to use the conclusions drawn from analysing one sample of properties to support conclusions about another'

(Fuerst et al., 2011:167).

Justifying the geographical focus on secondary office property outside of Central London, the same authors go on to argue that,

'Data for locations outside of Central London falls far short of the detailed information available for Central London commercial property. The preoccupation with "prime" property is a potential problem for green pricing research. Some of the more significant effects may be felt in secondary and tertiary markets and these may be more difficult to identify with poor data availability'

(Fuerst et al., 2011:167).

Following an exploration of data resources conducted during a scoping study for this research, Appendix 2 describes this situation and details some of the property data resources that have been available in the UK over the last 20 years. Many of these

resources are no longer available. Justifying the creation of a secondary office stock appraisal, Appendix 2 indicates that the last estimation of commercial business premises vacancy was published a decade ago in 2005 (this information was used to inform the 2013 office to residential permitted development legislation). Myers and Wyatt (2004) utilise analogies from the labour market to describe this situation. They argue that unemployed people in the UK are characterised and measured regarding duration of unemployment, age and location, yet there is nothing comparable for unemployed buildings making critical appraisal and intervention difficult to evidence and justify.

2.7 Constrained Perspective: The Consequence of Imperfect Information

Consequently, in the UK commercial office market, the gap between what we know and what we think we know is dangerously wide. This is because information in relation to secondary office vacancy does not exist. Instead, property market actors have to rely upon available information associated with the more efficient prime market. Lausberg (2008) indicates that the only accepted form of market information in relation to commercial office vacancy is the natural rate of vacancy. However, the natural rate of vacancy is associated with positive aspects of office vacancy, such as initial, frictional and cyclical vacancy and the prime office market (Kerris and Koppells, 2006). These types of vacancy assist the market clearing process and are considered positive. However, the natural rate of vacancy does not account for office properties that do not clear the office market process, such as those segments of secondary office property that no longer have a relationship with occupier demand in their current use.

The implications of this situation are disquieting. Instead of focusing on what is not known and working to remedy this situation, market actors and academics focus on the comfortable reality of the 'prime' office market described by the historical 'natural' rate of vacancy. However, this estimation of vacancy ignores those properties that are no longer considered natural (Chapter 4 indicates that this accounts for up to 90% of vacant office stock in the UK). Consequently, the commercial office market in the UK is beset by what Pickety (2014:2) calls,

'An abundance of prejudice and paucity of fact.'

Which results in a potential risk, where,

'We overestimate what we know and underestimate the value of the unknown'

(Taleb, 2010:140).

This deficit provides further justification for the focus of study. It is important that market actors and academics focus on all types of property, in particular those that are unknown. This is in order to guard against risk and then to recognise and consequently exploit uncertainty (Lausberg, 2008; Remoy, 2010; Taleb, 2010). Under the current situation, to all intents and purposes, the secondary market is entirely invisible, only the top rung of the property ladder is visible (see Chapter 4 for an extended exposition of vacancy concepts). Indeed, the natural rate of vacancy and its associated 'prime' market only accounts for a relatively small segment of the commercial office market

Perhaps this situation should not be surprising. Imperfections in data and information are a traditional concern in economics (Stigler 1961, 1962). Orthodox assumptions of the commercial office market are generally based on supply and demand, whether they take the Ricardian view that land has only one use, the neo-classical view that it can have alternative uses or whether it is set out in a Marxist theory of differential rent. However, the underlying assumption of all three positions is that markets will clear and that owners and renters of land will sell to the bidder who expects to gain the greatest income (Evans, 2004). The underlying principle of all three theories is that potential tenants, investors, developers and regulators have perfect access to information regarding all of the alternative office properties in the market which in turn can be used to inform a bidding process.

These traditional positions have been widely criticised in recent years and new perspectives have been articulated. Reinforcing the argument in Section 2.4, these positions argue that traditional theories over simplify the economic process, detaching decision making from context, ignoring the competing interplay between agency and structure (Adams and Tiesdell, 2010). Indeed, suggesting the secondary office vacancy situation, it is more likely that the ill-informed hand leads to perversity within the built environment. Highlighting this issue, Simon (1959) argues that it is unrealistic for the property profession to 'optimise' when making decisions, instead they are 'satisficers,'

they find something suitable enough for their purposes and within the confines of bounded rationality do the best they can within circumstances at their disposal.

The 'natural' rate of vacancy exists because of imperfections in the price adjustment process and is used to inform rental adjustment. Comparison of the natural rate of vacancy at a given time with the actual rate of vacancy gives some insight into the future movement of rent. The natural rate of vacancy fluctuates over time as a result of exogenous business cycles and endogenous cycles in construction development (Hendershott, 1995).

However, the natural rate of vacancy only considers those properties that efficiently clear the commercial office market. It does not consider inefficient office properties (Lausberg, 2008). Yet, in certain quarters the 'natural' rate of vacancy is mistakenly taken for, or consciously used as, a proxy measurement of 'actual' office vacancy, one an estimate over time; the other a snap shot in time. Indeed, Tse and Webb (2003) and Remoy (2010) argue that the natural rate of office vacancy fluctuates somewhere around 4-10% (approximately half of the figure exposed in Chapter 4).

Explaining this situation, Stigler (1961, 1962) proposes the theory of the 'fixed sample,' and 'adequacy.' He contends that it is impossible for economic decision makers to have perfect access to all information and therefore they base their decision making on the best data available which is a more or less an adequate proxy for their needs. The natural rate of vacancy is an example of this situation. However, the consequence of this situation is that if we ask a property professional to consider the risk of persistent office vacancy it is likely that they will use an analytical model that excludes the possibility of this type of vacancy. In other words, we are making real estate decisions based on the presumption that poorly performing office property does not exist.

Consequently, not only does the natural rate of vacancy exist because of imperfections in commercial real estate, it helps reproduce these imperfections. It pays no heed to properties that exist outside of this process, those that do not efficiently clear the market. The implications of this position are considerable; formulations of 'absorption rate', 'take up' and 'rental adjustment' are all generally derived from the 'natural' rate of vacancy, as are calls for new office development.

Furthermore, Hagen and Hansen (2010) argue that the 'natural' rate of vacancy gives insight regarding property investment return. If the 'natural' rate of vacancy is relatively low over time the amount of rent generated by a given property will be higher.

If the 'natural' rate of vacancy declines further the return on rental property will increase further, *ceteris paribus*. In other words, a low (especially consistently low) or decreasing 'natural vacancy' rate is desirable as it will give the appearance of steady rental growth over time.

Exacerbating this situation, proponents of the 'natural' rate of vacancy typically take capital cities as their territorial reference point and in turn use these rates as proxy measurements for national office vacancy. However, Central London cannot be taken to reflect all of the UK, Berlin cannot represent all of Germany and Paris does not approximate commercial real estate in all of France. In other words, information is not only limited in its coverage of property supply it is also discriminate in terms of location.

The 'natural' rate of vacancy can be conceived as a form of market-based cognitive anchoring and heuristic (Taleb, 2010; Kahneman and Tversky, 1979). In other words, the commercial office market uses the 'natural' rate of vacancy as a reference point in decision making. However, the 'natural' rate of vacancy is not the norm; it is an ideal and therefore the exception. This is a partial perspective and introduces a bias at the heart of real estate decision making. Yet, Taleb (2010) warns that when you develop your ideas based on weak evidence or partial perspective it is difficult to interpret subsequent information that contradicts these opinions.

Chapter 4 reveals the features of this situation; first of all, it outlines the characteristics of secondary office vacancy before detailing a stock appraisal of secondary office vacancy in the UK. It then details the causes of secondary office vacancy before introducing a conceptual framework for vacancy that includes secondary office vacancy. The stock appraisal of secondary office vacancy is a descriptive account, designed to first of all prove its existence and then to provide an empirical basis for the remaining qualitative enquiry. A qualitative focus was chosen to reveal the practitioner and social characteristics of secondary office vacancy. This human focus meant that there was no opportunity for quantitative and econometric analysis of secondary office vacancy. Chapter 7 argues that this is a clear opportunity for further study because the data model developed in this research is able to provide an econometric account of secondary office vacancy that has never been tested or applied to real estate modelling before.

2.8 Initial theoretical re-conceptualisation

The previous sections in this chapter have detailed the evolution of the commercial office market in the UK and the emergence of secondary office vacancy. They have argued that research into the incidence of secondary office vacancy is lacking. Research and practice is mostly physical, beset by information deficits and biases in relation to the natural rate of vacancy and the prime office market and typically ignores the influence of human behaviour. The following section ties these various arguments together into a theoretical framework using Grabher's (1993) treatment of 'Lock-in' and path dependence.

During the early 1990's path dependence was introduced as a new alternative to the orthodox neo-classical economic perspective based on optimisation and equilibrium (Henning et al, 2013). Brian Arthur (1989) and Paul David (1985) are often considered to be the founders of evolutionary economics. Arthur (1989) separated the economics discipline into 'conventional' economics that did not recognise historical contingency and 'contemporary' economics which embraced path dependence and evolution (Henning et al, 2013). The latter perspective emphasises that decisions are not only influenced by present conditions but also decisions that have been taken previously.

Path dependence can trace its emergence to work in other intellectual fields. In physics and mathematics, it is associated with the non-linear trajectories of chaos theory and the cumulative influence of small events. In biology, emphasis is placed on contingency and the power of natural selection. Popular books during the late 1980s and early 1990s such as James Gleick's *Chaos* (1987), Mitchell Waldrop's *Complexity* (1992) and Stephen J. Gould's (1989) *Wonderful life* brought path dependence and contingency into the wider imagination of society. The central tenant of path dependence is that decisions made in laissez-faire markets can lead people and society along unsatisfactory trajectories. Therefore, any economic decision, and the presumption of optimal decision making, must be understood within the path dependent circumstance that the decision is made within.

This lock-in to historical evolution means that people, society, business and locations, are locked into and constrained by historical circumstances and may not be able to access better services, products or industries that may improve their situation (Henning et al, 2013). Grabher's (1993) work into the Ruhr valley was one of the first studies to integrate the emerging field of path dependence and evolutionary economics

into economic geography, in this case regional development. Broadly speaking, in the social sciences literature path dependence and lock-in is taken to mean that history has a significant influence over the evolution and consequences of social occurrences and events. In the economic geography literature, research typically exposes path dependence centred on the persistent behaviour of people, society, business and locations, as they continue to operate in close relation to historical behaviour in contexts that are significantly different to the original historical circumstances (Henning et al, 2013). The consequences in regional economic geography are persistent regional infrastructures and institutions that no longer support the best economic outcomes (Grabher, 1993; Meyer-Stamer, 1998; Bathelt and Boggs, 2003; Hassink, 2005).

More recently, regional economic research has begun to consider how locations can rectify this situation and break out of the rigid structures of path dependence (Hassink, 2005; 2007; Hassink and Shin, 2005; Martin and Sunley, 2006; Castaldi and Dosi, 2006). Martin and Sunley (2006, p. 420) have sketched five ways of alleviating regional lock-in; indigenous creation of new paths, heterogeneity and diversity, transportation from elsewhere, diversification and the improvement of existing industrial infrastructures and institutions. For instance,

“The de-locking of a local industrial path may arise endogenously if local firms switch to a different, perhaps related, sector of activity on a new path that is perceived as affording more profitable opportunities”

(Martin, 2010:6-7).

This argument can be extended to the commercial office market. While path dependence has certainly been used to examine the constraining influence of the past (Comin et al., 2010) it can also be used to investigate why certain types of office development and institutional practice dominate when alternatives are available and potentially more beneficial. A useful analogy is the historical development of the QWERTY keyboard originally used by David (1985). The QWERTY layout is the dominant computer keyboard despite the availability of better designs for at least 30 years. David (1985) argues that this is because the nature of the original technological investments and associated institutional development is now very difficult to reverse because the initial

decisions set in chain a course of events that cannot be altered without considerable disruption

Grabher (1993) argues that urban configurations in space and place ‘ossify’ over time, dependent on previous types of economic growth, reducing their adaptive capacity and create inherent vulnerabilities (Pike et al., 2010). Illustrating this situation Grabher (1993) identified three kinds of ‘lock-in,’ functional, cognitive and political, and indicated that ‘lock-ins’ of this nature can overlap and reinforce one another. Taking forward the work of Grabher (1993) in relation to ‘lock-in,’ this section introduces an additional set of ‘lock-ins’ that help explain the incidence of secondary office vacancy and its relative silence in academia and practice.

Namely,

- Theoretical lock-in;
- Institutional lock-in;
- Behavioural lock-in; and
- Physical lock-in.

First, the relative silence of secondary office property in academic and practice debate can be associated with a type of theoretical lock-in associated with atheoretical and orthodox modes of thought. Most research into the incidence of office vacancy and potential re-use has been the concern of architects, surveyors and urban designers (see Remoy, 2010; Wilkinson et al., 2014; Kincaid, 2000, 2002) or orthodox real estate researchers and economists in relation to depreciation, obsolescence and the rental adjustment process. This has dissuaded critical reflection in relation to secondary office property or in the latter case ignored it altogether. Theoretical lock-in can be equated with three other types of lock-in: ‘institutional lock-in’, ‘behavioural lock-in’ and ‘physical lock-in.’ All of which coalesce to first of all cause and then disguise secondary office vacancy.

Second, institutional lock-in describes the impact of private and public sector working practices. The use of partial samples and constrained information and the reliance upon capital and global cities as proxy measurements for national vacancy, illustrate this situation. Third, behavioural lock-in describes the propensity for market

actors to anchor themselves to orthodox positions and certain types of information which are then reproduced by standard market information bulletins such as quarterly office outlook surveys. This type of lock-in can also be equated with a type of lock-out, where human behaviour is missing from the analysis of vacancy and its potential management and amelioration. Fourth, physical lock-in describes the functional design of office buildings and their association with previous modes of economic activity outlined in the history of offices, which is then reinforced by the physical orientation outlined in theoretical lock-in.

Illustrating this situation, Bryson (1997) argues that cities are a reflection of the symbiotic relationship between specific social and economic processes. Over time, economic activity and social structures change due to new working practices, consequent economic restructuring and societal and cultural progression. In response, the built environment adapts to reflect this continual change through a process of on-going creative destruction (Bryson, 1997, Harvey, 1978). However, in Chapter 4 research participants indicate that vacant secondary office property is not readily changing in relation to societal and cultural progression. Illustrating this situation, Barras (2009) has identified a range of office building cycles, long cycles (15-20 years), major cycles (7-11 years) and minor cycles (3-5 years) that demonstrate the symbiotic relationship between office building development and socio-economic processes of business and economic development in recent decades. However, he has also argued that more recently these cycles have become more frequent, volatile and uncertain which has led to increasing bouts of upheaval and office vacancy (Barras, 2009).

Reflecting this situation, the underlying argument in this thesis is that outside of Central London, significant quantities of underused and vacant commercial office property will never be efficiently utilised within their current conditions again. The current situation is one where supply is 'locked-in' to historical designs and cycles of economic form and function. Each cycle is depositing more layers of secondary office vacancy which are coalescing and ossifying into ever greater rumps of vacant stock. Traditionally, the production of office space follows the business cycle, however, this means that office production is retrospective when it should be prospective if it is going to exploit future occupier demand. Indeed, Chapter 4 indicates that significant quantities of vacant secondary office property are stranded in the built environment as it lags the requirements of occupier demand. Chapter 5 indicates how this situation might be

exploited, while Chapter 6 indicates how this situation might be ameliorated in the future. Finally, Chapter 7 revisits the initial theoretical argument laid out in this chapter and overlays this with the empirical findings laid out in the middle chapters.

2.9 Chapter Summary

This chapter has illustrated the context for research, namely the evolution of the commercial office building in the UK, its fragmentation and the contemporary incidence of secondary office vacancy. The deficit in relation to knowledge of the nature, scale and location of secondary office property has been established alongside the consequent impact this has on the management and potential future amelioration of the same issue. These three research deficits inform the central research questions that underpin this research (see Chapter 1). Finally, an alternative analytical prism, lock-in, has been conceptualised in order to make sense of the secondary situation.

The next chapter sets out the methodological framework for the investigation of the three research problems and details the approach used for each of the three research phases.

Chapter 3 Methodological Framework

3.1 Introduction

Chapter 2 established the evolution and centrality of secondary property in commercial office markets and identified a deficit in relation to comprehensive research into the nature, scale and location of vacant secondary commercial office vacancy and its potential management and amelioration through various strategies of re-use. In addition, no one, with the exception of Kincaid's (2002) objective Standard Industrial Classification (SIC) category analysis, has considered the nature of human behaviour in relation to this phenomenon. Instead, accounts rely on the physical appraisal of buildings or the implicit assumptions found in econometric analysis. Therefore, fresh research is needed into this issue, in relation to the stock of vacant secondary office accommodation (in order to reveal its existence) and in relation to the explicit behaviour and response of property actors in relation to this incidence (in order to reveal its production and potential management and amelioration). The proceeding chapter sets out the methodological approaches that have been used to investigate this gap in knowledge.

In order to investigate the nature, scale and location of secondary office vacancy, it was first necessary to identify a research philosophy that was cognisant of the theoretical arguments in Chapter 2. For this purpose, the thesis adopts the critical realist ontology and epistemological rationale that favours a layered reality and emergent form of theory creation. Second, an area within which secondary office vacancy was likely to exist needed to be identified. The UK commercial office market (outside of Central London) was chosen for this purpose (see Chapter 1 and Chapter 2 for a contextual history and Chapter 3 for an appraisal of methodological parameters).

Research is split into three interrelated and mutually reinforcing phases of enquiry. The reason for following this approach is to solidify, intensify, confirm and contradict knowledge between one method/data source and another. Indeed, using this mixed method approach will strengthen the quality of research (Hoggart et al., 2002) and,

“Confirm, cross-validate, or corroborate findings within a single study”

(Cresswell, 2003: 217).

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The commercial office market exists within an 'open system' and should be explained utilising a multitude of mechanisms, potentially very different, which correspond to different scales of reality (Hoyer and Naess, 2008). This is particularly important as the factors involved in (un)sustainable commercial real estate practices partially involve the natural sciences, social sciences and are partially of normative and ethical character (Hoyer and Naess, 2008). As such the research design needs to be flexible enough to reflect this varied reality.

Phase 1 reviews international literature and presents an initial theoretical re-interpretation of secondary office vacancy (Chapter 2). Phase 2 researches the nature, scale and location of vacant secondary stock in order to create an empirical bedrock for study (Chapter 4). Phase 3 identifies and converses with a sample of market actors involved in the study locations in order to understand the response to this issue and the opportunities and challenges associated with its potential amelioration (Chapter 4, 5 and 6). One way to understand the approach is through triangulation, Phase 1 is an abstract theoretical construct, Phase 2 is top down and descriptive, while Phase 3 is a bottom up approach designed to push the underlying causality of secondary office vacancy, its management and potential amelioration, to the surface.

3.2 Research Philosophy

This study is sceptical of both positivist and constructivist paradigms and seeks to avoid the metaphysical or epistemic fallacy that reality is a consequence of only experience or experiment (Sayer, 1984; Yeung, 1997). It concedes that these positions are useful in certain contexts but concludes that both methods, by discounting certain forms of knowledge a priori, would produce narrow depictions of the vacant secondary property phenomena. Therefore, this study bases its ontology on the construed relationship between structure and agency which it considers to be stratified with multiple layers of reality. This is anchored upon a commitment to institutional analysis (Guy and Henneberry, 2000) which can broadly be considered as an attempt to understand overlaying and competing ways of seeing and acting by inserting them in their contextual framework.

The world and therefore the built environment is something we are part of creating, although knowledge of this is remote (Sayer, 2000). In particular, this approach

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argues that the built environment is a consequence of a continual ‘construal’ between context and decision maker (Massey 1984). To summarise this perspective, this thesis places emphasis upon what exists rather than what does not and how this knowledge can be practically used to inform the continual use of secondary commercial office properties.

Echoing the work of Barnes and Sheppard (2010) and DeLyser and Sui (2013:10), the study follows a process of ‘engaged pluralism’,

‘Where alternative views are engaged, divergences are tolerated and differences dialogically embraced.’

In doing so, the research philosophy in this study is informed by and adapts the critical realist perspective. Critical realism is a relatively new philosophical position, however it has been interpreted in different ways in a number of different disciplines, sociology (Sayer, 2000; Layder, 1990), Economics (Lawson, 1997), Geography (Proctor, 1992; Yeung, 1997), housing research (Lawson, 1997), marketing (Easton, 2010), linguistics (Nelhaus, 1998), religious studies (Robbins, 1999) history (Steimmetz, 1998), social work (Houston, 2001), ecology (Trosper, 2005), environmental studies (Bania, 1995), management studies (Ackroyd and Fleetwood, 2004) and most recently urban planning (Naess, 2014). However, with the exception of Pratt (1994), in the author's best knowledge it has never been explicitly applied to commercial real estate research.

Critical Realism binds realist ontology with an interpretive epistemology (Bhasker, 1998; Archer, 1995) contending that a real world exists but that our knowledge of it is socially constructed and fallible. In doing so, it has the potential capacity to combine the practical reality of commercial real estate with some of the recent heterodox positions outlined by Guy and Henneberry (2000) and more recently Adams and Tiesdell (2010). The layered ontology at the heart of critical realism is split into three levels, the real, the actual and the empirical. The empirical layer contains our experiences of reality, the actual layer includes the events which are caused by generative mechanisms (whether they are observed or not). While the real layer contains the mechanisms that have generated power and caused the actual events. Critical realism contends that the majority of analysis takes place at the empirical level, but argues that it should take place underneath, at the level of causation within the conditional and contingent force of local,

institutional and historical context. Causality is portrayed as a mechanism, which is basically a causal structure that generates a phenomenon (Bhasker, 1998). However, the outcome of any mechanism is contextual and is dependent on a multitude of other mechanisms. In other words,

'They are stuff-dependent and system-specific'

(Bunge, 2004:195).

A mechanism may cause one eventuality in one location and another elsewhere, or it may not take place at all (for instance secondary vacancy is very rare in Central London). The approach is particularly useful for investigating non-linear relationships with repeated feedback loops, systems that are open and leaky and phenomena that are embedded into multiple layers of context and social systems. Indeed, Chapter 2 argues and Chapter 4 proves that the incidence of secondary commercial office vacancy is a surface level phenomenon that is undercut by a much wider and deeper set of causal structures.

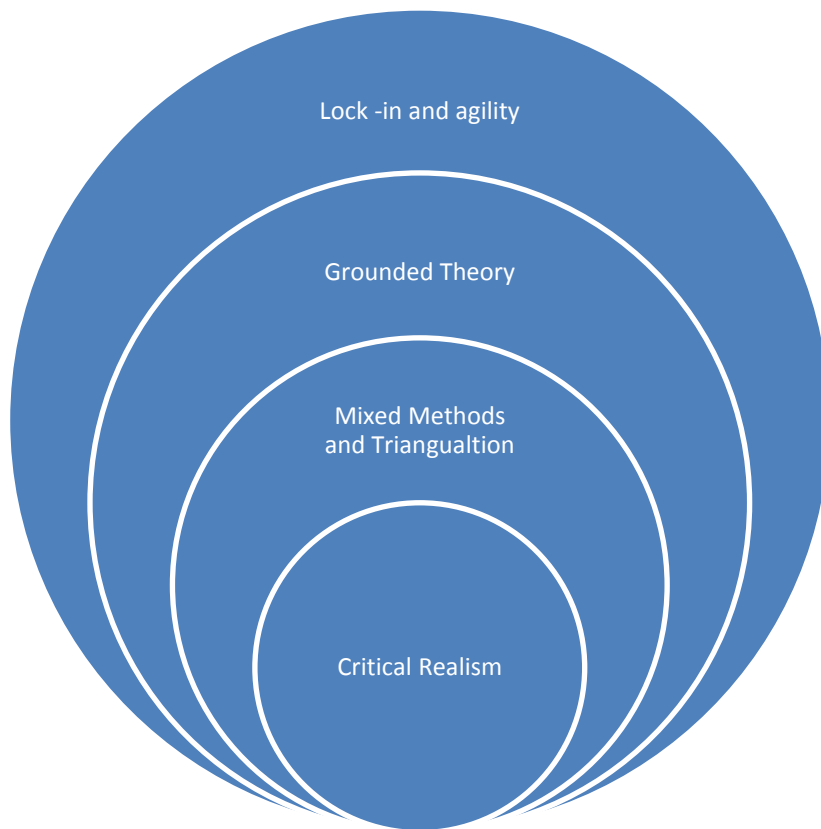
As a philosophy it was particularly prominent in the 1990's (it is now seeing a resurgence because of the perceived detachment and solipsisms of post modernism and the various interpretive positions (see Naess, 2014), most notably in human geography, sociology and economics where Sayer (2000) and Lawson (1997) adopted the position. However, this study is closest to the work of Yeung (1997), who justified the use of critical realism as an underlying research philosophy in combination with abstract reasoning, mixed methodologies, triangulation and grounded theory production.

Epistemologically this situation is revealed by the use of mixed methods and a grounded theory production (Yeung, 1997). Path dependence and lock-in is the analytical prism for this study and exists in partnership with the research philosophy and the explication of urban agility in Chapter 5 and 6. In the absence of an existing academic interpretation of secondary office vacancy, urban lock-in was initially articulated in Chapter 2 to make sense of its manifestation. Following the principles of retroduction, the lock-in perspective is then progressively refined by the empirical findings in Chapters 4, 5 and 6. The overall process is used to draw out the causation of secondary office vacancy rather than its empirical end product. Following Lawson (1997), once a generative mechanism has been isolated it can be utilised in other property market

contexts. Of course, the study does not argue these types of lock-in, nor the respective generative mechanisms outlined in Chapters 4, 5 and 6, will hold true in all property markets in the same way. Each location will have its own contingent circumstances. Rather, the thesis sets out a set of principles and viewpoints which can be applied to assist enquiry.

Figure 3.1 depicts the relationship between the research process and the emergent theoretical construct.

Figure 3.1 Theoretical Formulation



3.3 Research Ethics and Positionality

In order to conduct sound and ethical research it is necessary to consider modes of positionality, reflexivity and power relations. Ethical modes of enquiry, namely ‘situated knowledge’ are adapted to ground the study in respect to its relative biases and limitations. This is because knowledge is situated and partial in nature (Harraway, 1988). Indeed, the contingency of knowledge can be equated with the bounded rationality in economics (outlined in Chapter 2) where decisions are based on a set of irrational choices

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and biases (Simon, 1959). However, Harraway (1991:187) argues that this can be mitigated by accounting for positionality within research, offering,

‘A more adequate, richer, better account of a world, in order to live in it well and in critical, reflexive relation to our own as well as others’ practices of domination and the unequal parts of privilege and oppression that makes up all positions.’

The researcher is a former urban regeneration practitioner with experience of many of the issues in this thesis. As such careful attention was paid to dispassion, displaying neither positive nor negative feelings when conducting the Delphi exercise. An advantage of the researcher's biography is that he was familiar with many of the study areas, their geography and actors associated with these markets. However, throughout both quantitative and qualitative research, the author remained cognisant that considering his role in this process and how it is negotiated is necessary in knowledge production (Hoggart et al., 2002).

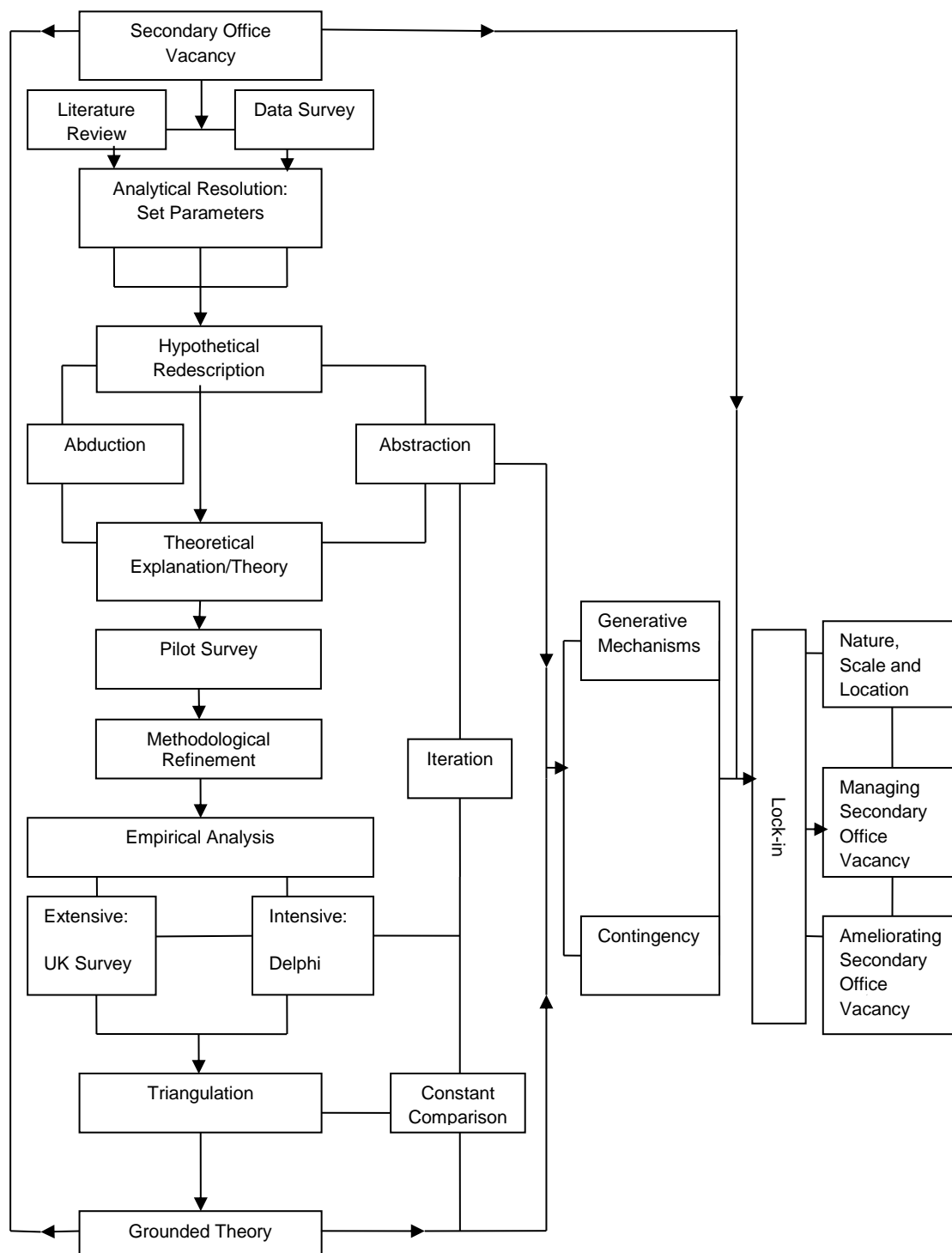
Denscombe (1997:144) notes, researchers are,

‘Expected to be open and explicit about what they are doing – to let people know that they are researchers and that they intend to collect data for the investigation into a particular topic. Furthermore, they are expected to tell the truth about the nature of their investigation and the role of the participants in that research.’

Throughout the Delphi exercise all efforts were made to ensure clarity in relation to the research objectives and potential outputs. All respondents were offered anonymity and within this text are referred to by respective job title unless it was specifically considered likely to reveal undue personal characteristics. In addition, all respondents were given reassurance that all transcripts and personal contact details would be protected in the strictest confidence. Furthermore, it is important to highlight the institutional dynamics associated with this thesis. This piece of research was funded by a full time university PhD studentship, provided over a three-year period by Northumbria University. It is important to note that throughout the research process Northumbria University did not exert any explicit influence on the research process or interpretation, after initial approval by the Faculty of Engineering and Environment Research Ethics Committee.

3.4 Research Process

Figure 3.2 Research Process



(Adapted from Yeung, 1997)

Figure 3.2 (adapted from Yeung, 1997) describes the research process. It begins with the research problem, 'the incidence of secondary office vacancy,' before following the iterative stages and recursive theory production that concludes with and informs the research outputs. 27 locations and more than 14,000 separate incidences of vacancy have been surveyed, while 37 respondents contributed to a two stage Delphi expert exercise.

Initially a comprehensive literature review and data survey was carried out to achieve analytical resolution and definition of the research parameters. Utilising a process of abduction and abstraction, existing theories were used to interpret the incidence of secondary office vacancy. It soon became apparent that the nature, scale and location of commercial office property, in particular secondary office vacancy was under researched. There were some notable exceptions, Greenhalgh (2006) and Katyoka and Wyatt (2008) and Myers and Wyatt (2004). However, none of the authors specifically interrogated the issue of secondary office vacancy.

Consequently, a hypothetical redescription was developed and an alternative theoretical framework was adapted based on path dependence and lock-in. It develops a critical perspective of commercial real estate, utilising concepts and methods associated with heterodox and relational concepts of urbanism. The utilisation of path dependence and lock-in enabled an initial theoretical explanation of secondary office vacancy which was used to inform the pilot study and methodological refinement. The pilot study enabled the creation of a method for filtering and isolating secondary office vacancy, which could in turn be applied to the wider study area. The cities of Newcastle and Leeds were used for this exercise because of their mature office market characteristics and the quality of data in these locations.

The next stage involved primary data collection and data analysis which in turn recursively informed and improved the emergent theoretical framework based on path dependence and lock-in. This was continued throughout the study through the process of retroduction. Primary data collection involved two main methods of enquiry and articulation. Firstly, a quantitative stock appraisal of secondary office vacancy in the UK captured and characterised vacancy as it resides in the urban environment.

Following this, an iterative Delphi study was carried out to capture the causal process and response to secondary office vacancy in the UK with local participants selected from professional networks. This was in order to depict the depth and internal characteristics of the research problem. This required following the actions and relations

between the diverse arrays of actors involved in the production and reproduction of secondary office property and the ways in which such actors use tools, instruments, norm, regulations and technologies to create specific built environment outcomes.

Findings from both strands of enquiry were triangulated and are examples of between method and data triangulation (Denzin, 1970). Grounded theory were utilised to generate findings and theory from the Delphi study utilising the constant comparative method (Glasser and Strauss, 1967). Grounded theory aligns well with the iterative nature of Delphi analysis and the overall emergent process of theory development and re-description outlined in the research strategy, re-informing the original literature review and ultimately informing the research outputs.

3.5 Methodological Parameters and Delineation of Sample Area

The parameters for this study have been carefully considered and are derived from an initial exploration of literature and the initial pilot study findings. Methodological parameters are an extension to the research parameters outlined in Chapter 1 and detail the underlying methodological decisions. The office market study location, the UK outside of Central London (described in Chapter 1 and 2) was delineated using a combined methodology of office agency location and office agency market assessment. In theory an office agency exists to support the office conveyance process, therefore its location is an effective proxy for office market proximity. Following this rationale removed some researcher bias from sample design, quite literally leaving sample formulation to the market process. An appraisal was conducted of the major office agencies in 2013 (Jones Lang LaSalle; DTZ; CBRE; Knight Frank; Lambert Smith Hampton; Colliers International) in terms of their locational attributes and the level of market information they provided.

Lambert Smith Hampton had the greatest market coverage (the other agencies had gone through significant geographical rationalisation into regions following the 2008 recession) and was therefore adopted as the geographical basis for enquiry (covering 36 locations). The central London locations of the West End, Midtown, City, Docklands and Heathrow were omitted from the enquiry as they were considered to form part of the Central London office market. Chapter 1 attests that the secondary office vacancy issue exists outside of London, in addition the Central London office market is well researched in comparison to the rest of the UK (see the issue of geographical bias outlined in

Chapter 2). Therefore, concentrating enquiry outside of Central London responds directly to this deficit.

The caveat to this decision is Croydon. During parameter design, Croydon was receiving a great deal of attention in relation to office vacancy. This suggested that the classification of Central London as prime, and the rest of the UK as secondary, was not straight forward. Therefore, the decision was taken to include Croydon within the enquiry in order to analyse this situation. After the Central London omissions (and the addition of Croydon) this left 32 locations in the UK that approximated the commercial office market outside of Central London. It was then either not possible to attain information (or it was not of an appropriate standard) from Birmingham, Sheffield, Bristol, Edinburgh, Norwich and Swansea, which left a final sample profile which comprised 27 locations (containing over 14,000 separate incidence of vacancy), which follow below in Figure 3.3.

Figure 3.3 Study Area



3.6 Revealing Secondary Office Vacancy in the UK

Quantitative methods have been used to descriptively analyse the UK office market. In terms of explanatory power another means of conducting such analysis does not exist in relation to its ability to accommodate and synthesise large amounts of information. The secondary commercial office vacancy stock appraisal is designed to reveal the nature, scale and location of secondary office vacancy. As such it is one layer in an emergent investigation and forms the empirical reference point for this investigation.

Secondary datasets created by central and local government for taxation and valuation purposes form the basis of this stage of enquiry. Utilisation of this information, apart from the clarity it provides to the research questions, has many benefits. Financially it is particularly advantageous as this study does not have the means to gather datasets of this size and nature in the first person (nor do commercial agencies with the possible exception of Co-star/Focus and the Estates Gazette). Furthermore, this type of data is often the highest quality available, and in most cases is as representative as you could possibly get (Bryman, 2008). An additional positive attribute of secondary information is that it can be used as a form of unobtrusive measurement, with the researcher removed from the phenomena being observed (Bryman, 2008).

The use of secondary data resources of this magnitude allow research which otherwise would not exist on grounds of practicality while it also lends itself to further analysis and matching with other datasets when the appropriate conditions allow. In addition, such datasets can be transformed and modified to better reflect the phenomenon under investigation (Gomez and Jones, 2010). Reflecting this practice, new indicators and variables have been introduced to the secondary property database to improve its analytical capability, while property assessments have been aggregated to create vacant building profiles. For the purposes of presentation, and legibility, methods of spatial exploratory data analysis have been adapted and presented, combining maps, graphs and tables in order to interrogate the data and discover new socio-economic spatial configurations (Gomez and Jones, 2010 and Longley et al., 2005).

Limitations of such resources do exist. The researcher can suffer from a lack of familiarity with secondary data and also has no control over data quality, instead relying on trust (Bryman, 2008). While the availability of secondary data resources is very much a privilege of more affluent countries, less affluent countries rarely have the resources to

create data of this magnitude and grain (Gomez and Jones, 2010). Finally, the Modifiable Area Unit Problem (MAUP) is perceived as a regular problem with secondary datasets (Gomez and Jones, 2010). In other words, because the geographical basis for secondary datasets are social/political constructs they do not necessarily reflect the phenomenon under investigation. This can lead to conclusions that reflect political boundary construction rather than the relevant phenomenon. The sample method followed in this study is designed to account for this weakness, the geographical sample specification is twofold, first it follows major office agency presence as an indication of market presence, in addition it utilises major office agency market assessment locations. Rather than the researcher imposing a biased interpretation of market dynamic or a geographically pre-determined sample it is co-produced, utilising the market process as its foundation.

3.7 Identifying Commercial Office Vacancy

The baseline datasets utilised in this survey are the following:

- National Non Domestic Rate Returns (NNDR)
- National Valuation Office Summary Valuation Data Set (England and Wales)

Supplementary information was accrued from commercially available data sources such as the Estates Gazette and Focus-Co-Star. The underlying methodology adapts methods first articulated by Katyoka and Wyatt (2008), Myers and Wyatt (2004) and the Department of Communities and Local Government (DCLG) in 2006 which investigated the development of commercial and industrial property vacancy statistics in the UK. This research from the previous decade demonstrated the possibility of using existing datasets to create periodic vacancy statistics in the UK. Although the VOA summary valuation data does not include any record of vacant property, it does include useful property characteristic information such as rateable value, size and type of property. In comparison, although National Non Domestic rate returns (NNDR) are less useful in terms of property characteristic they do hold an accurate record of vacancy within a given administrative locality. In the UK all vacant properties must pay empty property rates (EPR), those that do not must prove exemption (information related to exemption is also recorded in the baseline NNDR information).

By themselves neither statistic is particularly useful, however both datasets contain common unique property identification codes which enable matching of both datasets using information processing methods such as 'Lookup' and 'WhatIF' functions in Microsoft Excel. Once combined the datasets provide a relatively raw depiction of vacancy within a locality. The method is considered relatively exhaustive in coverage (notwithstanding the limitations outlined in Chapter 1) and depicts all vacancy within an administrative area. The initial Pilot Study in Newcastle upon-Tyne and Leeds relied upon manual matching of the respective datasets using the VOA agent mode application. Although an accurate system, derived from the overall summary valuation data set, it could only interrogate one hereditament at a time and therefore was laborious in terms of time (each location contains many thousands if not millions of hereditaments).

It is important to note at this point that a hereditament is not a necessarily an entire building (although it can be). Rather, hereditament is the legal term for a unit of commercial property upon which it is possible to levy tax. For instance, a large office building may be separated into a number of floors, combination of floors or subdivision of individual floors and let to a multitude of tenants, all forming separate hereditaments. It therefore became apparent that the purchase of the full 2010 summary valuation set would aid database development in terms of time and practical analysis. However, this data was only available for England and Wales. Aberdeen and Glasgow still needed to be matched via the Scottish Assessors website which operates an individual hereditament system (similar to the VOA agent mode facility). This decision, and the expense incurred, demonstrates on one hand, the data that is available under government control and on the other hand, the limited functional ability afforded to members of the public and third party interests despite the Government's open data policies.

It was then necessary to refine the raw database to better reflect the underlying research questions. Initial research and requests for NNDR datasets (conducted through Freedom of Information (FOI) request) were based on the following variable based data request. This roughly follows the recommendations of DCLG (2006) and Katyoka and Wyatt (2008):

- Property address
- Billing account reference number
- Rateable value

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- Length vacancy/relief start date
- Property description

A process of data cleansing in both datasets was then needed before analysis could begin. Address information was converted into separate columns. Hereditaments with more than one assessment were merged into one record and erroneous data records were excluded. A full explanation of the data matching process can be found in the Appendix section of DCLG (2006). There are 29 separate fields of data in the VOA summary valuation data set. Those fields that were not useful to the study of office vacancy were excluded in order to make the data set more manageable, focusing on property attribute and unique property identification fields of enquiry. Following cleansing the respective databases were matched to create a raw depiction of vacancy with the following attributes

- Property address
- Unique reference number
- Rateable value
- Length vacancy/relief start date
- Property description
- M^2
- $£/M^2$

To enable additional analysis further data fields were created manually:

- Building era
- Building grade
- Property name
- Building reference number

Building era and quality fields were incorporated into the database in order to enable research regarding the building age and segmentation of quality. Commercial information resources such as Estates Gazette and Focus – Co-star were utilised to complete this part of data collection. Where possible each building was given a name; in both the NNDR and VOA datasets it is more common for each property to be defined by

its floor rather than actual building name. Although a time consuming process, this stage is considered crucial in the enhancement of data legibility. The final stage of database creation was the incorporation of a unique building reference number. Previous unique identification had been associated with individual property hereditaments. In order to facilitate the collapse of hereditament into whole or partially vacant building profiles, common property identification was needed.

During research, the square metre denomination of floor space was also converted to square feet. This was because it became evident during the Delphi exercise that respondents were not grasping the magnitude of the secondary vacancy issue when it was interpreted in M². When it was multiplied into square feet respondents began to engage with the issue with more interest. Consequently, in Chapter 4 the floor space metrics are displayed in both units.

Once hereditament based information had been collapsed into building profiles the aggregation procedure can commence. The following sets of data needed to be cumulatively totalled:

- M²
- Rateable Value

And an average be taken of:

- length of vacancy

This stage enables the meaningful quantification and valuation of vacancy in the UK. Relying on number of hereditament as a proxy for vacancy can be misleading as the amount of vacant hereditaments could be inversely proportionate to the actual quantity and value of vacant space. In other words, it is entirely possible for one large hereditament to be greater in value and size than 100 smaller hereditaments. Alongside floor space, value is the other primary descriptor used to describe secondary office vacancy in this thesis. It bases this assessment on rateable value, which is the Government's assessment of property rental value for tax purposes. Rateable Value: According to Schedule 6 Local Government Finance Act 1988 rateable value is,

'The amount equal to the rent at which the property might reasonably be expected to let from year to year if the tenant undertook to pay all the usual tenant rates and taxes and bear the cost of repairs and insurance and other expenses (if any) necessary to maintain the property in a state to command that rent.'

In other words, the rateable value is the hypothetical annual market rent that a tenant would be prepared to pay for the property, if rented on the open market on the above terms at the 'antecedent date' (usually the 1st April, 2 years before the date that the Valuation List comes into force). Rateable value will lag real growth because of its intermittent nature (the last valuation exercise was in 2008 at the top of the market), this is a potential weakness. However, due to the recession, it can be considered more realistic as rents declined sharply after 2008 and have only recently begun to recover in certain locations and for certain types of property. Utilising rateable value, despite its age, is a consistent and accepted form of property valuation and is used in this research to comparatively analyse the cost of commercial office vacancy in the UK.

Two analytical methods, 'vacancy weight' and 'compound loss' are introduced in Chapter 4 in order to analyse the secondary office vacancy stock take. These methods reflect upon the relative impact and value of vacancy at the micro scale. They are set out in full in Chapter 4 to help the reader because their design and formulation is part of, and synonymous with, the information discussed in Chapter 4.

3.8 Revealing Market Behaviour

Chapter 2 argues that neo-classical approaches to real estate analysis ignore the costs and frustrations that customers, investors and decision makers face when considering secondary office property. Indicating this situation, Brenner et al (1985:7) argue,

'If you want to know something about people's activities, the best way of finding out is to ask them through the everyday activity of talk'.

The researcher takes up this challenge by utilising a Delphi expert technique of consensus building. The Delphi approach has been used sparingly in real estate research,

Remoy (2010) and Greenhalgh and Bendel (2015) are notable exceptions. The approach can trace its lineage to the technology forecasting studies conducted by the RAND (Research and Development) Corporation for the American military in 1944 (Gupta and Clarke, 1996) and is a valuable approach for capturing and integrating particular opinions in order to fill a deficit in knowledge and/or a shortfall in consensus (Delbecq et al., 1975). The typical process involves successive rounds of questioning with analysis related back to participants between rounds (Gupta and Clarke, 1996). Hanafin (2004) usefully summarises the literature in relation to the Delphi method. It has been characterised as a survey (Wang et al., 2008), procedure (Rogers and Lopez, 2002), method (Linstone and Turoff, 1975; Crispe et al., 1997) and technique (Broomfield and Humphries, 2001; Snyder-Halpern, 2002; Sharkey and Sharples, 2001).

Demonstrating its flexibility, this rich engagement has resulted in considerable adaptation, relative to the research problem in question (Gupta and Clarke, 1996; Crisp et al., 1997). However, this malleability has also drawn criticism in relation to academic rigour (Delbecq et al., 1975, Hasson et al., 2000 and Okoli and Pawlowski, 2004). The Delphi method is flexible and because of this it has been questioned on grounds of reliability, validity and credibility (Delbecq et al., 1975; Hasson et al., 2000; Okoli and Pawlowski, 2004; Sackman, 1975). For instance, Powell (2003) has argued that a consensus approach may dilute the best opinion (or outlier perspectives) with results reflecting the lowest common denominator. Throughout the study, the researcher has been conscious of this potential shortfall. In order to mitigate this potential issue during theory production, attention was paid to creating consensus around themes rather than one individual end product.

Linstone and Turoff (1975:3) indicate that this technique can be used to structure a group communication process, and is useful in,

'Allowing a group of individuals, as a whole, to deal with a complex problem. '

In this case the group is a set of actors who represent and engage with the UK commercial office market, and specifically the production and response to secondary office vacancy.

The common approach to the Delphi technique is quantitative and is based on a statistical method of establishing consensus (see Remoy, 2010 for an application of this

technique). This stands in opposition to the epistemological foundation for this study. However, the principles of the Delphi technique, particularly the notion of consensus is still useful. Therefore, echoing the work of Fitzsimmons and Fitzsimmons (2001) the researcher adopted a qualitative focus and has adapted the Delphi method and integrated it with the grounded theory method of knowledge production. Hanafin and Brooks (2005:7) indicate that this approach has several advantages,

- Where a problem does not permit the application of precise analytical techniques but can benefit from subjective judgements on a collective basis;
- Where the relevant specialists are in different fields and occupations and not in direct communication;
- Where the number of specialists is too large to effectively interact in a face to-face exchange and too little time and/or funds are available to organise group meetings;
- Where ethical or social dilemmas dominate economic or technical ones.

Ranking and closed questioning was replaced with an open ended interview format. The actual question frameworks used in the two stages of enquiry and the information snapshot that informed the second stage of analysis is contained in Appendix 4 and 5.

The Delphi process went through two rounds, the first stage findings were analysed and synthesised and sent back to the respondents (see Appendix 5) to inform their responses to the second stage of enquiry which involved confirmation of the findings in the first stage of enquiry. This process was followed because group interaction does not take place independently. Participants in the enquiry needed to 'listen' to the opinions of other participants in order to form and understand their own thoughts (Marshall and Rossman, 1995; Reed and Roskell, 1997)

Reflecting this situation, a conscious decision was taken to organically weave the participant content into the text in order to, where possible, create a narrative account of secondary office vacancy and its potential management and amelioration (Etherington 2007; Hertz, 1997). The intent behind this approach is to bring to the surface the varying types of institutional language and attitudes that texture the secondary commercial real estate interaction. Therefore, throughout the thesis, those taking part in the research are considered, and referred to as, research participants, rather than respondents and all effort

is made to give voice to these opinions. This responds to a perceived criticism of the Delphi method held by the researcher, which contends that although the Delphi method is based on subjective opinion, the rich information that this presumes is often collapsed into quantitative number.

3.9 Participation and Consensus

A variety of purposive sampling techniques were used to form the basis of a sample framework of those involved in secondary office vacancy in the UK, based upon Kincaid's (2002) summary of those taking part in the office vacancy and re-use process. Table 3.9a sets out this situation, explaining each group and indicating the distribution of research participants per category.

Table 3.1 Research Participant Matrix

Group	Description	%
Investors	Pension funds, insurance companies, banks, independent investors, professionals who find capital to fund and potentially purchase a building.	14%
Producers	Architects, consulting engineers, surveyors, contractors, specialist suppliers, professionals who develop the specification, cost the specification and implement the changes to a building, RICS, RIBA, CIOB and ACE members	20%
Marketeers	Surveyors and agents	31%
Regulators	Local authorities, English Heritage, DCLG, professionals who review the statutory requirements for changes to a building, RTPI members	31%
Users (individual owners/corporate organisations)	Large institutional owners and users of buildings (all research participants are also users in their own right)	17%
Developers	Organisations that seek to combine investment, production and marketing in whole or in part, professionals who derive from any of the above-listed professions and others	17%

NB: Adapted from Kincaid 2002, in addition, %'s do not equal 100% because certain research participants appear in more than one category.

The principle means of respondent identification was the Co-star maintained Propex list of office and investment agents, funds, institutions and property companies in the UK (2410 potential contacts). The researcher made use of the elite/expert practitioner approach outlined by McGuinness et al (2015). The reason for this approach was influenced by the observations of Temonos and McCann (2013) who argued that this approach can help understand the unwritten practices that shape institutional frameworks and the tacit understandings built up by practitioners over a number of years that reinforce and subvert these context bound situations (see Harvey, 2011; Aberbach and Rackman, 2002 for a detailed discussion of this method).

Those located within the study area geography or with a national or international role were targeted. This method covered investment, finance and office management and letting, however, it was less successful in relation to regulators, developers and producers. In order to reach research participants in these areas, the researcher followed an iterative snowball technique, supported by exploratory research on the internet. Although the Propex list did not contain information for these latter actors, those contained within the list did work with regulators, developers and building surveyors on a daily basis and were able to recommend suitable research participants in these areas. In this sense the Propex list was a key source of primary contacts and also acted as a gatekeeper in relation to additional research participants (while all research participants are office tenants themselves). This later method was important in identifying public sector workers (for instance in urban planning, economic development and regeneration), those engaged in development and those in the design professions (the RIBA membership directory was useful in isolating relevant participants in the latter field).

Recruitment took place in June 2014 via email and 50 secondary office market actors agreed to participate. Each respondent was emailed a short description of the project with a request for their assistance. This approach was relatively successful, however, there was a degree of delay between this stage and the actual sending of Stage 1 to each participant. The result was a degree of attrition, 37 respondents ended up taking part in the process. If the process is repeated in the future, a key learning outcome is to strike when the iron is hot and engage with respondents immediately when they are initially engaged. The first round of the Delphi Exercise adopted an open ended approach to questioning and participants were given freedom in their response (Hasson et

al., 2000). Although this approach proved problematic in terms of the sheer quantity of information received, in the opinion of the researcher this was more than compensated for by the quality of the information. A broad question structure (see Appendix 4) was used to direct enquiry based around key questions emanating from the literature review. This was then used to help direct the second round of enquiry which focused on confirming the findings in the first Delphi iteration.

Some respondents struggled with the open ended nature and length of the questioning in stage one. Several respondents indicated that they would have preferred more structure and closed questioning. Consequently, refinement in stage two regarded not only analysis of findings but also feedback regarding questionnaire design. Upon request from several participants, the analysis from stage one Delphi, which informed stage two, was condensed into a bite size format to aid comprehension. Furthermore, after piloting the question format, it quickly became evident that the initial mode of question and information dissemination, email, chosen because of its flexibility, negligible cost and convenience for participants during their daily work routine, was not fulfilling the aim of rich interaction. If anything, the medium was too convenient, participants could, and did, rapidly answer the questions. However, this was often with single word answers.

Therefore, an early decision was taken to move to telephone based questioning, facilitating a closer researcher and participant interaction. A methodological finding is that while the medium of email is a seductive tool in terms of convenience and in ensuring a degree of researcher detachment, it did not ultimately support the enquiry objective. This demonstrates the fine balance between methodological purity and the pragmatics of coupling this with the working environment, something that was a challenge and learning process throughout research.

Moreover, a significant challenge throughout this study has been the interaction with and the consequent questioning attitude of the researcher toward orthodox academic and practitioner attitudes and conventions. Some participants embraced the research problem, however, it would be disingenuous to suggest that all participants reflected this situation. Indeed, some participants argued that greater laissez-faire input would ameliorate the situation. Consequently, some of the interviews were heated which necessitated the researcher developing a thick skin, acting more like an investigative

journalist with the recognition that not all practitioners would share the same enthusiasm for the research problem as the researcher.

3.10 Theory Creation

Overall, the thesis uses extensive (Phase 2) and intensive (Phase 3) research methods combined with theoretical abstraction (Phase 1) arguing that primacy should be placed on how a method is used, rather than what method is used (Porpora, 1998). The approach is an example of what Denzin (1970) describes as ‘between method’ and ‘data’ triangulation. Historically, quantitative and qualitative research has often been seen in contrast. This research argues that this is often not useful or simply false (Layder, 1993). This research takes the position that the two approaches should not be seen as incompatible but rather complimentary in the appropriate circumstances (Bryman, 2008, Hammersley, 1992; Roberts 2002). Indeed, knowledge is theory laden and inherently fallible, however this does not mean that it cannot be empirically analysed, only that we must be critical in its application.

By following a method of triangulation, grounded theory and retroduction, theories although partial in nature, can be developed with respect to secondary office vacancy and its place within the wider urban environment. Following the grounded theory work of Laydar (1993), theory development is derived from empirically observable phenomena in order for abstraction not to occur in vacuum. In this study ‘retroduction,’ associated with critical realism, where an argument,

‘Moves from a description of some phenomenon to a description of something which produces it or is a condition for it’

Bhaskar (1986: 11).

Is articulated via grounded theory which,

‘Is an approach to the generation of theory out of data’

Bryman (2008:541).

Methodological Framework

There are few demonstrations of critical realism and grounded theory (Yeung, 1997) and fewer that utilise the Delphi technique. Taken together these methods are considered a reliable means of articulating 'secondary' office vacancy and are original in their methodological design.

The Delphi exercise has been designed to operate in accordance with grounded theory and the method of constant comparison. Rather than reliance on overtly objective data and standard questionnaire format, questions are subjective, each round of enquiry has been coded and recoded to gain theory consensus. This in turn informs the next round of Delphi enquiry. This forms the empirical part of recursive theory production in this study. The advantage of the grounded approach is that theory is built from the ground up beginning with the practitioner perspective.

The transcripts from each conversation were carefully coded into a framework reflecting the observation of Corbin and Strauss (2008:163) that,

'A 'close encounter' with data in the beginning stages of analysis makes the analysis easier in later stages because there exists a strong foundation and less need to go back to find the missing links.'

Information was set out under general headings as themes persistently emerged and cross referenced with the observations of other research participants (Glaser and Strauss, 1967). Coding followed a constant state of revision and comparison enabling the researcher to

'Compare phenomenon being coded under a certain category so that a theoretical elaboration of that category can begin to emerge'

(Bryman, 2008:542).

Following this strategy enabled continuous refinement as categories were merged into themes (and removed), new categories emerged and new relationships were revealed (Goertz et al., 1981).

Methodological Framework

However, the method of grounded theory production is not without its limitations.

Firstly, Bryman (2008:549) indicates that the time afforded to interview transcription can hinder,

'A genuine grounded theory analysis with its constant interplay of data collection and conceptualisation.'

Furthermore, he goes on to argue that the separation of large pieces of data can produce,

'A loss of a sense of context and of narrative flow.'

Notwithstanding these limitations, Bryman (2008: 550) argues that grounded theory,

'Probably represents the most influential general strategy for conducting qualitative data analysis.'

Under these circumstances, the researcher does not impose the hypothetical theory (outlined in Chapter 2) upon research findings, rather through a process of retroduction this theory is grounded in the phenomenon under investigation and reformulated via a systematic process of relating the theory back to the original data (Strauss and Corbin 1990; Yeung 1997).

The researcher conducted this process using an electronic word document and paper based 'post it' note system. Memos and labels were used to reveal and record relationships between different sets of findings and initial thoughts in relation to interpretation and progress. These findings were in turn used to create conclusions and theories which could be contested and confirmed in subsequent stages of enquiry. At the outset NVIVO, a software package that can be used to aid this process was used. However, after repeated software failures and loss of information, this system was quickly abandoned in favour of the afore mentioned analogue method. In the researcher's opinion, the organic method was ultimately more useful and enriching as it enabled a thorough immersion (quite literally at times) in the participant information process.

3.11 Research Quality

This study combines both quantitative and qualitative approaches. This section details considerations of validity and coherence in relation to both perspectives utilising the work of Bryman (2008) in relation to Phase 2, Guba and Lincoln (1994) in relation to Phase 3 and for the overall research strategy, the framework of Yardley (2000) which places primacy on value as well as validity as a means of ensuring research quality. Research quality is also positioned within the contention that triangulation and mixed method approaches are a means of ensuring quality in themselves (Denzin, 1970).

When conducting quantitative enquiry, Bryman (2008) outlines the following quality considerations,

- Measurement validity
- Internal validity
- External validity
- Ecological validity
- Reliability
- Replication

In relation to measurement validity, the geographical area covered in this study is defined by market presence (see Section 3.5). The properties within this area have been derived from the VOA summary valuation data set and NNDR government returns. This information contains all vacant properties within an area (notwithstanding the caveats outlined in Chapter 1), as such it is considered that the research strategy is an exhaustive account of the phenomenon under investigation. Internal validity is not a consideration for this study, (quantitative enquiry has only been used for descriptive purposes, causality is assessed in Phase Two), while in relation to external validity, the contention is that the findings cannot be generalised to other market contexts as they will have their own contingent circumstances.

However, the filter model and its techniques can be used in any context given the presence of assistive data conditions. In relation to ecological validity, the degree to which the research reflects the actual phenomena, the research draws upon an exhaustive sample of commercial real estate in the UK and therefore the research is grounded within

Methodological Framework

the actual situation, rather than an approximation. Furthermore, presuming the underlying data exists, the methodological description in this chapter has been meticulously detailed in order to ensure the potential for replication in additional scenarios.

In relation to qualitative enquiry, Guba and Lincoln (1994) outline the following quality criteria,

- Credibility
- Transferability
- Dependability
- Confirmability

In relation to credibility, the research findings represent a credible conceptual interpretation of the data. A recursive Delphi exercise was followed in order to arrive at consensus aided by the constant comparison method in grounded theory. With care the findings from Phase 3 can be transferred elsewhere as the sub-optimal relationship between the generation of real estate, and the preference for it, is presumed to exist everywhere. However, each potential location will have its own contingent circumstances which can alter such mechanisms and at times distort and obscure particular findings. In relation to dependability, the methods and modes of analysis have been carefully chosen to correlate with the overall philosophical position and the needs of the research project. Furthermore, a methodical process of theory production has been followed, utilising the constant comparison method of grounded theory. This has enabled theory and findings to emerge throughout the research process and be confirmed through the Delphi consensus approach.

Moreover, Yardley (2011) has developed a framework for assessing overall research quality around the following principles,

- Sensitivity to context
- Commitment and rigour
- Transparency and coherence
- Impact and importance

Methodological Framework

The Delphi methodology ensured that the research strategy had sensitivity to context by following a recursive consensus building process. This has been designed to contextualise and understand the abstractions in Phase 1 and the empirical information generated in Section 3.2. In addition, the researcher has established his relationship with the research problem in the discussion of motivation in Chapter 1 and the consideration of positionality and reflexivity in this chapter. In relation to commitment and rigour, Sections 3.1-3.10 detail the research process and demonstrate the thoroughness of data collection, analysis, reporting and the emergent process of theory development.

In order to ensure transparency and coherence, the methods utilised in this research have been fully explicated. While the reflexivity, motivation and theoretical position is detailed in Section 3.2 and Chapters 1 and 2. In relation to impact and importance, this study is the first of its kind in the UK and has the potential to inform and improve the academic and professional context of this issue. Findings have been presented at several international conferences and practitioner working groups, they have gained exposure in the national trade press and papers have begun to be published in academic journals (see Chapter 1, author's declaration). In addition, the findings are being used to support the development of a quarterly secondary office market information bulletin (funded by Citibase Ltd following exposure in the national press) and will be distributed to more than 65,000 commercial real estate actors and reported in the Estates Gazette on a monthly basis.

3.12 Chapter Summary

This chapter has set out the methodologies and framework for the three phases of enquiry. The intent has been to carry out distinct but coherent methods of enquiry to arrive at a multi perspective account of secondary office vacancy. The two-stage interrogation process in the Delphi enquiry effectively put a lid on the research by unpicking and confirming the findings in previous stages of research.

Reformulations of theory production took place throughout the enquiry, viewing the

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‘Research process as a consecutive engagement of theory and methodology, spiralling between the abstract and the concrete. The process is permanently reiterative’

(Pratt, 1994:202).

The intensive and extensive research approach has engaged with more than 14,000 individual incidences of vacancy and 37 practitioners at the top of their profession in the UK ranging from local authority planners to international investment fund managers. The next chapters uncover the findings of this methodological framework and discuss their implications.

Chapter 4 Exposing the Nature, Scale and Location of Secondary Office Vacancy

4.1 Chapter Introduction

The previous chapter set out the methodological framework for research and the methods that have been used to fulfil the research requirements set out in Chapter 1. This chapter reports the findings from the first thread of research, revealing the nature, scale and location of secondary office vacancy. The chapter is split into four sections. Firstly, it considers what secondary property is. In particular, it reflects upon what the term 'secondary' means and how conceptualisations vary between locations. The term is part of the commercial real estate vernacular, yet, it has received little conceptual or critical attention.

Therefore, it has been necessary to first of all present a conceptual basis for secondary office vacancy in order to proceed with the research focus. Second, the chapter then presents a stock appraisal of secondary office vacancy in the UK, describing the physical nature, scale and location of secondary commercial office vacancy in the UK. The third section considers the casual nature and contingency involved in the production of secondary office vacancy. Finally, in order to better understand the variable nature of secondary office property, the fourth section presents an office vacancy typology. The typology builds upon the traditional concepts of initial, frictional and cyclical vacancy outlined in Chapter 2 in order to better reflect the full extent of commercial office vacancy. This typology forms the bridge to the second thread of enquiry in Chapter 5, managing the incidence of secondary office vacancy.

4.2. Isolating the Secondary Office Market

Before embarking on a study of the nature, scale and location of secondary office vacancy, it is sensible first of all set out what secondary office property is. The terms prime and secondary (and occasionally tertiary property) are regularly used to segment the commercial office market. Yet, these terms have received little theoretical consideration and are typically taken for granted as natural parts of commercial real estate. Research participants indicate that there is no stable definition of secondary office property, rather, it is construed by a dynamic range of market actors within contingent

circumstances. This is because the dynamics of local commercial office markets are complex and therefore difficult to exemplify without local knowledge.

4.2.1 Lost for Words or Spoilt for Choice?

The Head of Scottish Capital Markets at a leading office agency indicated that property grading initiatives in the UK, traditionally led by the British Council for Offices,

"Only provide benchmarks for either specifically new build property, or base their findings on physical design attributes only. Therefore, such tools are best used during design, construction and initial introduction to the market place. However, they do not assess the existing office market or secondary office space."

Indeed, a National Office Agent indicated that secondary properties are simply defined as,

"Those properties that fall below the standard for grade A specification in the BCO guide to office quality."

While a Planning Manager indicated that those working in the regulatory profession,

"Do not make the distinction between prime and secondary, rather they rely on use based criteria i.e. office, retail, industrial, and residential classifications."

In order to improve this situation, an Investment Agent in the North of England argued that,

"There needs to be a descriptive criteria and assessment of value which is relevant to the whole market place. Currently, secondary landlords do not pay any attention to the BCO, Breeam and EPC agendas, why on earth would they?"

Exposing the Nature, Scale and Location of Secondary Office Vacancy

Overall, research participants indicate that the situation is one of inconsistency, confusion, differing languages and points of reference which results in a definition of secondary property which is based on what it is not, rather than what it is. However, it is possible to draw some general principles from the practitioner world in order to begin a reappraisal of the situation. The Jones Lang Lasalle Little Book of Real Estate Definitions (the only definitional resource that the researcher could find) describes prime, and secondary property in the following way,

- Prime: Refers to property which is the best in terms of rentals and location
- Secondary: Property which is below that of prime in relation to rentals and location, generally high quality but not in CBD location.

(Derived from the online resource Glossary of Property Terms:
http://www.joneslanglasalle.com/ap/jll_dictionary/).

It is clear that the secondary and tertiary definitions are largely defined by what they are not (in respect to prime property), rather than their actual characteristics. Furthermore, the various definitions of prime, secondary and tertiary are often conflated and used interchangeably with similar definitions regarding grading of property (traditionally divided into A, B and C).

However, the researcher has chosen to focus on the prime, secondary and tertiary segmentation (subsequently, the secondary and tertiary segment has been merged following participant advice in relation to meaningful definition) rather than grade because the former is considered to be more inclusive and related to connected issues of location and wider issues in society. The various grades of property are more narrowly conceived in terms of specification. Indeed, an Office Agent commented that,

"Grade A and its counterparts describe a building's physical specification, prime and secondary is a wider definition and accounts for the power of location and wider social and market forces."

Convention suggests that prime office property is the most valuable and sought after. These buildings are typically (but not always) newly developed or have recently gone through major refurbishment. They occupy the best locations, have the highest

specification, furnishing and best access arrangements. These buildings compete for premier office uses, often with international precedence, and command the very highest rents. Secondary office properties describe all of those properties that fall below the prime standard (especially in terms of location, facilities and maintenance). Yet, the 'secondary' sobriquet is used to describe all of the secondary office market which oversimplifies the situation, presumably, there is a great deal of variance in the secondary sector that has not been determined (see the vacancy typology in Section 4.5). The proceeding section indicates that secondary office property is better described on a spectrum of differing qualities and potentials. However, it must also be noted that some respondents do not think it is a good idea to have a rich conceptual understanding of secondary office property. Indeed, an Office Agent in the North of England argues that a degree of ambiguity is positive,

"This is where I make my money, my colleagues and I inform customers whether a property is prime or secondary."

Linking into Pareto's (1906) historical notion of 'optimality' and perfect information, it is therefore questionable whether there is an incentive to create a conceptual picture of secondary office property in real estate practice because this would undermine the large research outlay, brand and in house research that individual companies have created to differentiate themselves in the market place (Senior, 2010).

4.2.2 Cycles of Change

There is consensus amongst research participants that the characteristics of secondary office property, particularly its quantity, can be cyclical. A Director at a leading office agency and an office agent indicate that,

"The market goes up and down, it always has. It is our job to make hay in the good times and shut up shop during the bad times."

Exposing the Nature, Scale and Location of Secondary Office Vacancy

"The current levels of secondary vacancy could be conservative, once new speculative build kicks in tenants could relinquish their in-between accommodation and move into the new supply of better properties."

However, this is counterbalanced by consensus in relation to a feeling of permanent change outside of Central London (and to a smaller degree in the CBD areas of the regional centres), where conditions previously only seen in periods of recession are now fixed. Research participants indicate that the quantity of prime property is in short supply all over the UK (corroborated in the Section 4.3). However, secondary property exists in abundance (substantiating the claims of Hammond, 2013 in Chapter 2). Hinting at another research opportunity, this view is reinforced by several respondents, who indicate that,

"There is a tonne of debt leveraged against secondary office properties, if not the majority, and no one knows what to do about it...Better to say nothing and hope that the problem goes away or I get to retire before it becomes apparent"

(Finance Director).

"A lot of secondary properties will be subject to extreme debt write off because they were priced at the height of the market with ridiculous expectations of growth. No one is talking about this problem. The best ones will be ok but the rest, the majority, will need to find new ways of making money...and paying back the debt"

(Fund Manager).

This indicates that the secondary office market is stratified, the better parts of secondary office property still has a part to play in certain locations and will still fluctuate with the market. However, the rest of secondary office property (potentially the vast majority) will not. These properties can be considered 'structurally vacant' (this is considered in greater detail in Section 4.5).

Exposing the Nature, Scale and Location of Secondary Office Vacancy

The issue of market cyclicity is important, however, research participants indicate that so is the rate of cyclicity and churn. Several respondents indicated that,

"Properties are becoming secondary quicker with demand altering at greater speed. Business requirements are changing with increasing frequency which is leading to quicker obsolescence...Given the pace of technological advancement and increasingly higher spec requirements, it can even happen to recently developed stock"

(Architect).

Indeed,

"Secondary office accommodation is more susceptible to cyclical vacancy purely because the types of firms that generally occupy secondary office accommodation are themselves more susceptible to churn. Changes to employment trends, recessions, etc can therefore disproportionately affect this market. Whereas prime stock will generally hold up well, as evidenced in the recent recession/economic downturn"

(Planning Manager).

4.2.3 UK Colloquial: The Power and Determinism of Location

Research participants also indicate that definitions of secondary office property are colloquial and locationally specific,

"Secondary space in Manchester means anything not new build. In Leeds, Newcastle and Liverpool, secondary refurbis can be prime. It depends on the nature of the market and characteristics of local supply"

(Head of Office Agency).

Exposing the Nature, Scale and Location of Secondary Office Vacancy

"Secondary buildings exist where prime property or rather demand once resided ...It is not all clear cut though. It is possible for bad secondary property to sit next door to prime property depending on its management and history"

(Partner, Investment and Development, Global Property Consultancy)

Furthermore, there was considerable consensus around the connection between secondary buildings and their wider location (this is a continuing theme in this thesis and is revisited in Chapter 6 where policy recommendations are detailed in relation to an agile space and place strategy). Illustrating this situation, a leading developer indicated that,

"In a similar way to the housing market, office building development is now dominated by a narrow section of builders who build very similar properties which are deposited within an area with very little recognition given to the wider concept of place. Is it any wonder that they fail so quickly?"

Secondary property is also dependent on perspective; one person's definition of secondary vacancy could be another person's definition of prime. There was consensus that secondary office space is particularly attractive to the creative industries, with the high gloss specification of prime anathema to many of these companies. Indeed,

"Shabby chic, it could not cost less to develop (well you could if you tried), people do not want bells and whistles. They want authenticity and flexibility. This is particularly well suited to vacant historical properties"

(Leading Developer).

"The San Francisco effect, based on the trendy start up scene, is really taking off, creative tenants want stripped back, bare walls with the guts of buildings revealed. In London there is a niche market where companies are constructing so called 'found space' speculatively"

(Leading Architect).

"Found space used to be a cheap and cheerful makeover option but now it is becoming more and more attractive as a principled line of investment. It is almost becoming possible to speculatively construct found space in certain contexts"

(Director, Global Commercial Real Estate Company).

These comments indicate that there is too much secondary space in the regional towns and cities. In contrast it is being built speculatively in Central London (see the office history in Chapter 2 for a depiction of the White Collar Factory project at Old Street Yard). This indicates that there are at least two different office markets operating in the UK, in very different ways.

4.2.4 Colouring Secondary

An unexpected finding was the issue of 'grey space'. Grey space represents those properties that are leased but surplus to requirements (it can be partially occupied or entirely vacant). An investment agent in the North East of England describes this situation,

"Vacancy is not just about empty buildings; it is about empty parts of buildings. When you walk around a town or city how many buildings are even nearly fully occupied? How many tenants actually want to be in those buildings?"

The incidence of grey space reflects the issue of disguised vacancy highlighted in the research parameters (something that cannot be accounted for in the vacant property database) and further indicates the hidden and partial understanding of commercial office vacancy already set out in Chapter 2. There is a potential preconception that vacant property is entirely a landlord issue. Instead, a pressing issue are tenants locked into restrictive lease agreements who have gone through considerable shrinkage and wish to sub-let their space. Positively, the tenant advisory group indicate that this space is typically cheaper to rent, less expensive to fit out than landlord space and is available on more flexible terms than standard landlord space (Markland, 2014).

However, what is unexpected is the quantity of grey space, in some buildings it could equate to 50% of a building's floor space and by some accounts represents 20% of

all commercial leased space in the UK which could be worth as much as £75bn (Hammond, 2013b). In an attempt to reduce costs, some tenants are enlisting specialist lease purchasers who mediate with landlords in order to exit the lease for a fee. This potentially signals a change in attitude toward tackling restrictive lease covenants which in the past have been largely unavoidable (Hammond, 2013b). Reflecting the influence of institutional norm detailed in Chapter 4, historically, this has been difficult as English property law, and commercial leases, traditionally favour the landlord over the tenant through the 'triple net,' (where the tenant is responsible for rent, building insurance and maintenance).

Yet, Markland (2014) argues that grey space is not a straight forward opportunity for occupiers as it is disguised by market institutions in three main ways. Firstly, landlords usually prevent tenants from raising 'To Let' boards on multi-let office buildings. Second, conveyance professionals prefer landlord space to tenant space because it is less convoluted and time consuming. Third, deals done on the tenant space market can erode nearby rents and capital values in the landlord market. Therefore, tenant's deals are actively downplayed by traditional office agents as they could erode their fee basis.

4.2.5 Depreciating Obsolescence

Research Participants continually defined secondary office property in terms of functional and economic depreciation and obsolescence (similar characteristics were found to be causes of secondary vacancy and factors in any re-use). Secondary office buildings have,

"Sub-par environmental ratings, terrible thermal efficiency, have cellular space, structures in the wrong place, outmoded M & E specification and low ceiling heights, no suspended ceilings or raised floors"

(Head of Office Agency).

"Bad accessibility, unattractive aesthetics, low quality facades and have no climatic and work place comfort"

(Property Advisor).

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"They lack modern employee centred facilities like Cafes, restaurants, breakout facilities, ATM's and cycle racks"

(Partner, Professional Services Advisor).

"They have low space efficiency...You cannot do much with a building which is littered with structural columns"

(Director, Investment and Development).

As a result, secondary office properties are,

"Extremely expensive to run and miserable to work in...and cannot be refurbished because the rental levels are so low"

(Associate Director Capital Markets).

"They are obviously in need of capital expenditure but no longer have economic viability to support investment"

(Head of Office Agency).

However, research participants indicate that depreciation and obsolescence is not straightforward,

"Often people blame buildings but this is a cop out, it is really down to bad management and a cycle of decline"

(Partner, Commercial Property and Real Estate Consultancy).

"Sometime the older properties are the most desirable, while the newest ones are cheap examples of pseudo-modernism. Interestingly modernist buildings are often reviled but have lots of functional tolerance"

(Leading Architect).

Other research participants highlighted the importance of premature obsolescence,

"These building are shot in terms of function but in actual fact they are decent buildings with considerable physical tolerance. They are just in the wrong location and targeted at the wrong customers who often do not exist anymore"

(Property Advisor).

Research participants have begun to clarify the notion of secondary office property. It is a deeply textured phenomenon with a multitude of characteristics. Certainly, it can be defined in terms of depreciation and obsolescence. Yet, it can also be defined by what it is not and be affected by economic cyclicalities and churn. Moreover, it also has a locational dynamic which can lead to colloquial interpretations and is often hidden behind institutional orthodoxy.

Therefore, based upon the views of research participants, the remainder of this thesis defines secondary office property as,

'Those properties that are not new and which make up the bulk of stratified commercial office supply. They are often difficult to identify due to lack of information and may be disguised by orthodox working practices. Such properties may suffer from one or more kinds of depreciation and obsolescence but could also be sound in basic structure. Its incidence can fluctuate with the economic cycle and exhibit significant periods of void due to the churn of tenants, while its characteristics and potential viability can be influenced by locational contingency'

(Authors own).

4.2.6 Structural Vacancy

The findings in the previous section indicate a separation between those secondary offices that are still viable in their present use and those that are no longer viable in their present use. Academic literature defines the latter as 'structural vacancy' (see Lausberg 2008, 2010; Remoy, 2010). The researcher adopts this term to segment those properties that are no longer useful in the present category of use but may have a future in an alternative use. Therefore, structural vacancy is deployed as a macro level description for those office properties that no longer efficiently clear the commercial office market. This term is used because it has connectivity to respondent findings in proceeding sections

that describe a structural change in the nature of occupier demand in respect to the relatively fixed conditions of contemporary commercial office supply. Therefore, it is also prudent to establish a definitional basis for structural vacancy in the UK. Remoy, (2010:12) has used the term structural office vacancy and describes it thus,

'Structural vacancy is defined as vacancy of the same square metres of office space over a period of three years or longer, with no perspective on future tenancy.'

Drawing on the work of Wheaton (1999) and Tse and Webb (2003), Remoy (2010) argues that in an efficient office market, the demand for and supply of offices does not differ significantly. In an upswing office supply will be scarce, during a down swing and during recession excess supply will be seen. She argues that this 'natural vacancy' equals between 3-8% of the office market. However, reflecting the arguments of Kincaid (2000, 2002), Remoy (2010) argues that in an unbalanced market the incidence of vacancy increases exponentially because of significant mis-match between the demand for and supply of office floor space. Remoy (2010) contends that where there is continual vacancy and over supply, structural vacancy can occur. In the Netherlands, an office market of abundance means that certain properties are preferred to others in a flight to quality. In such markets the occupier is in control, able to select from a range of high specification properties at similar rents. Remoy (2010) concludes that structural vacancy is either a result of increasing supply and constant demand or a result of constant supply and decreasing demand.

The term 'structural vacancy' has gained a certain degree of ascendancy in Western Europe over the last decade where it has been used to describe the overhang of vacant office accommodation. However, in the UK it is a little understood term and more often equated with the study of unemployment numbers which reveals the need for a working definition of the term for the UK office market. Research participants were asked their views with regard to the term structural vacancy, its definition (and through successive questioning), whether there was a need for a definition. Interestingly, most respondents had not heard of the term and initially struggled to define it, often referring to physical notions of building structure. However, upon further questioning, consensus settled upon those secondary properties that are no longer economically viable and

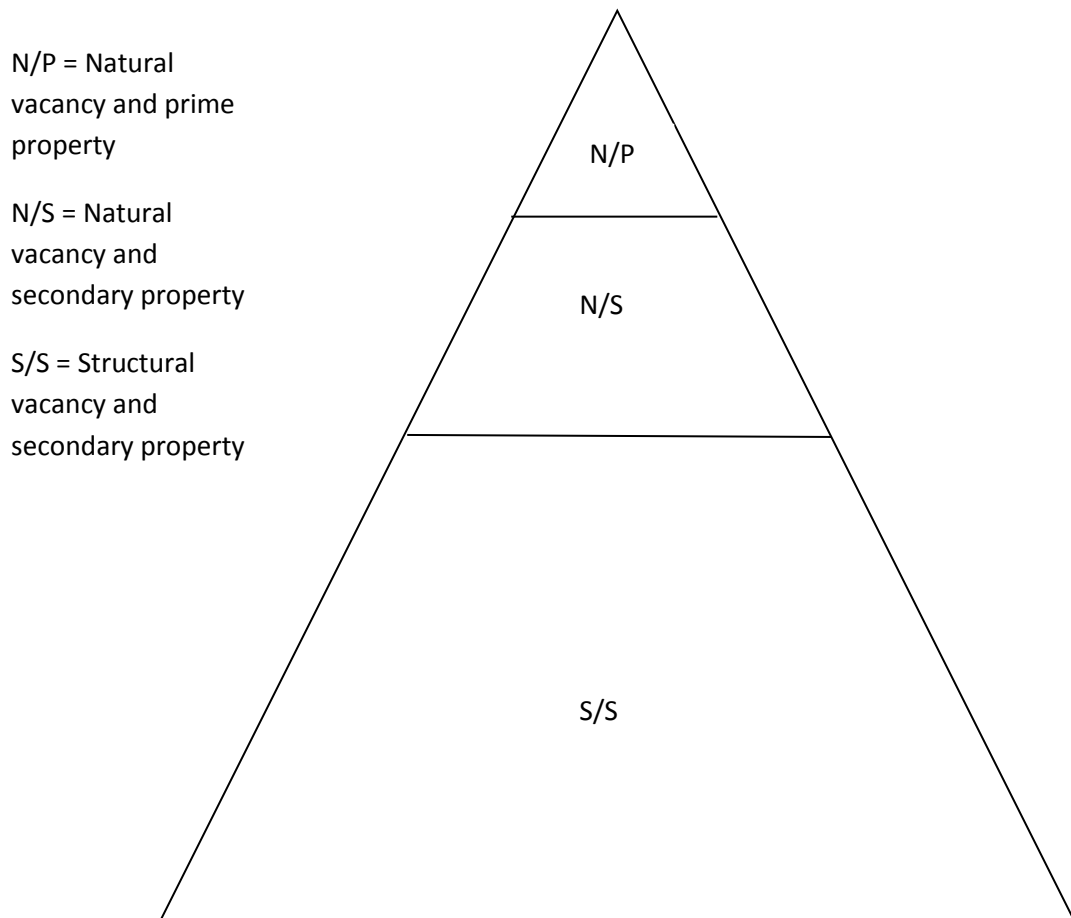
cannot practically be refurbished in their current office use. This was an important part in the research journey as it allowed for differentiation within the secondary office market. This leads the research into the general definition of structural vacancy deployed in this study. Structural vacancy describes those secondary commercial office properties

'That no longer have a relationship with occupier demand in their present class of use, but may, depending on circumstance, have a future in an alternative use'

(Authors own).

Utilising structural vacancy allows for differentiation between viable secondary office space and those properties that are no longer fit for original purpose (echoing the requirement of Lausberg, 2008 for an appraisal of negative vacancy). In this conceptualisation (see Figure 4.2.6a), structural vacancy is a macro level description and the opposite counterpart to natural vacancy. Natural vacancy describes those office properties that clear the office market and are still contiguous with occupier demand. Structural vacancy describes those properties that do not clear the office market and are stranded assets. Figure 4.1 below shows that secondary office accommodation is part of both natural and structural vacancy.

Figure 4.1 **Natural and Structural Vacancy**



NB: Pyramid represents vacant office stock and the proportionate contribution of each segment

The proceeding section outlines a micro level method, vacancy weight that can be used to engage with this issue at the local scale while Section 4.5 outlines an office typology that accommodates natural and structural vacancy.

In contrast to Remoy (2010), research participants did not define structural vacancy in terms of length of vacancy or building characteristic, rather, they defined a multitude of characterises (including physical attribute, location, prestige, market characteristics and rental structure) that may, or may not, combine in different locations to form structural vacancy. Therefore, structural vacancy is a sub-strata of secondary office vacancy. In contrast to Remoy's (2010) definition at the beginning of this section, the next section will illustrate that in the UK, structural vacancy is not necessarily found in those properties vacant for the longest time. This section indicates that some of those vacant secondary office properties most prevalent in terms of market overhang have only

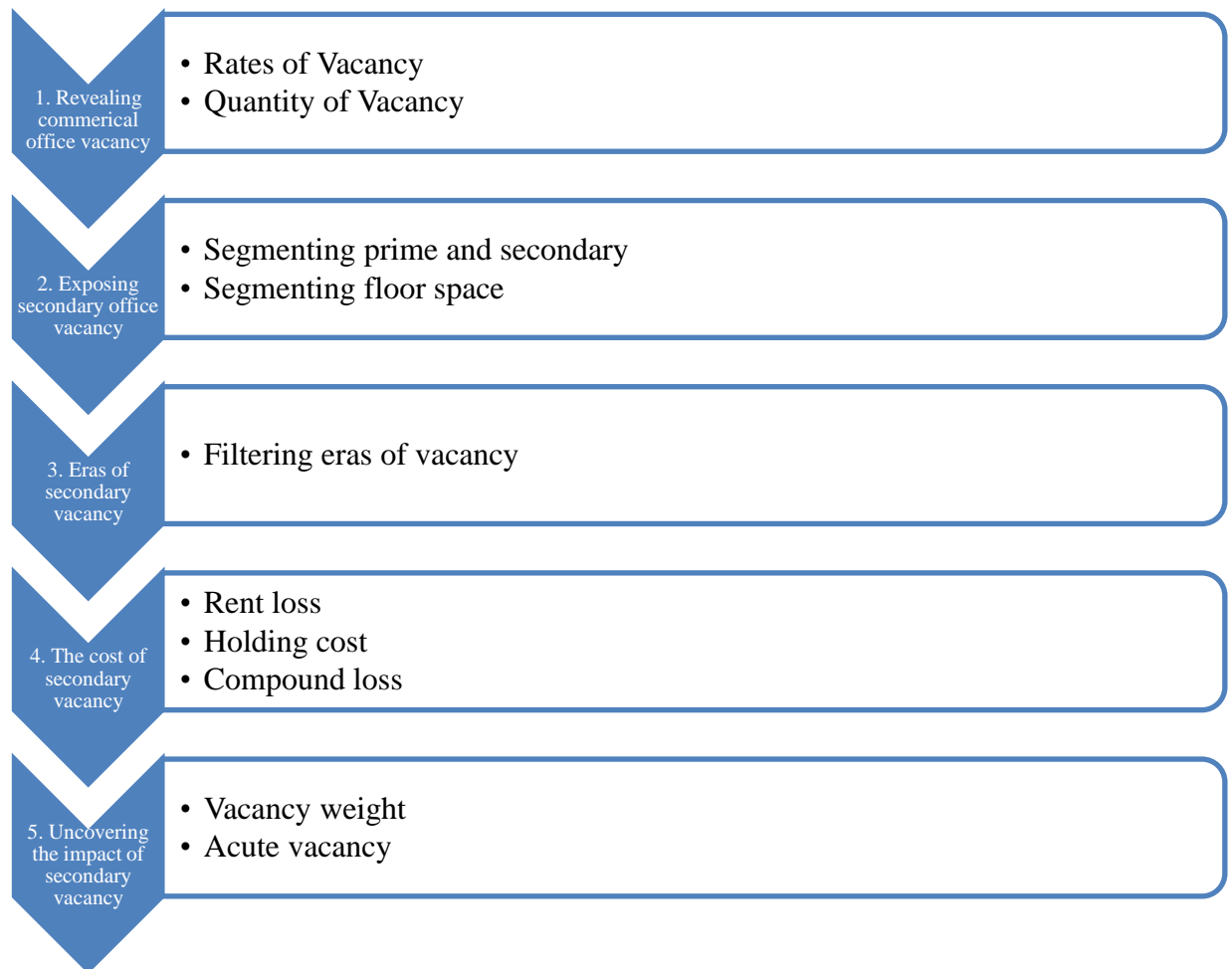
been vacant for a relatively short period of time. However, because of their overall size and value their impact is more significant.

4.3 Taking Stock of Secondary Office Vacancy

The previous section laid out the definitional structure of secondary office property and structural vacancy. This section lays out the empirical nature of secondary office vacancy. Traditionally, the appraisal of the incidence of office vacancy, and its potential management and amelioration, has been conducted without first of all appraising the empirical reality of the situation. This section addresses this deficit through five layers of analysis. Layer by layer the section filters commercial office vacancy in order to reveal its inherent characteristics. It then sets out a compound method for valuing secondary office vacancy and a micro level filter method for isolating structural office vacancy (see Chapter 3 for methodological details). In doing so, these last two stages respond to the research challenges set out by Remoy (2010) in relation to the valuation of vacancy, and by Wilkinson et al (2009) in relation to isolating vacancy.

Figure 4.2 below explains the five level filter approach,

Figure 4.2 Commercial Office Vacancy Filter Model



(Author's own)

The rationale for the filter model can be understood as a layered process. Layer 1 establishes the overall existence of commercial office vacancy in the UK, before drilling down into the data in order to reveal successive layers of detail. Layer 2 segments commercial office vacancy into prime and secondary markets; revealing a dearth of prime stock and a surfeit of secondary stock. Setting aside the prime market, layer 3 begins to unpick the characteristics of secondary office vacancy using a broad typology of construction eras. Layer 4 reflects upon the cost of commercial office vacancy, determining rental loss and holding cost. It then develops an indicator for the cost of office vacancy, compound loss, which can be used to explicate the value of commercial office vacancy. Finally, layer 5 considers the relative impact of vacancy. In doing so, it develops a simple micro filter methodology, vacancy weight, which is based on rateable

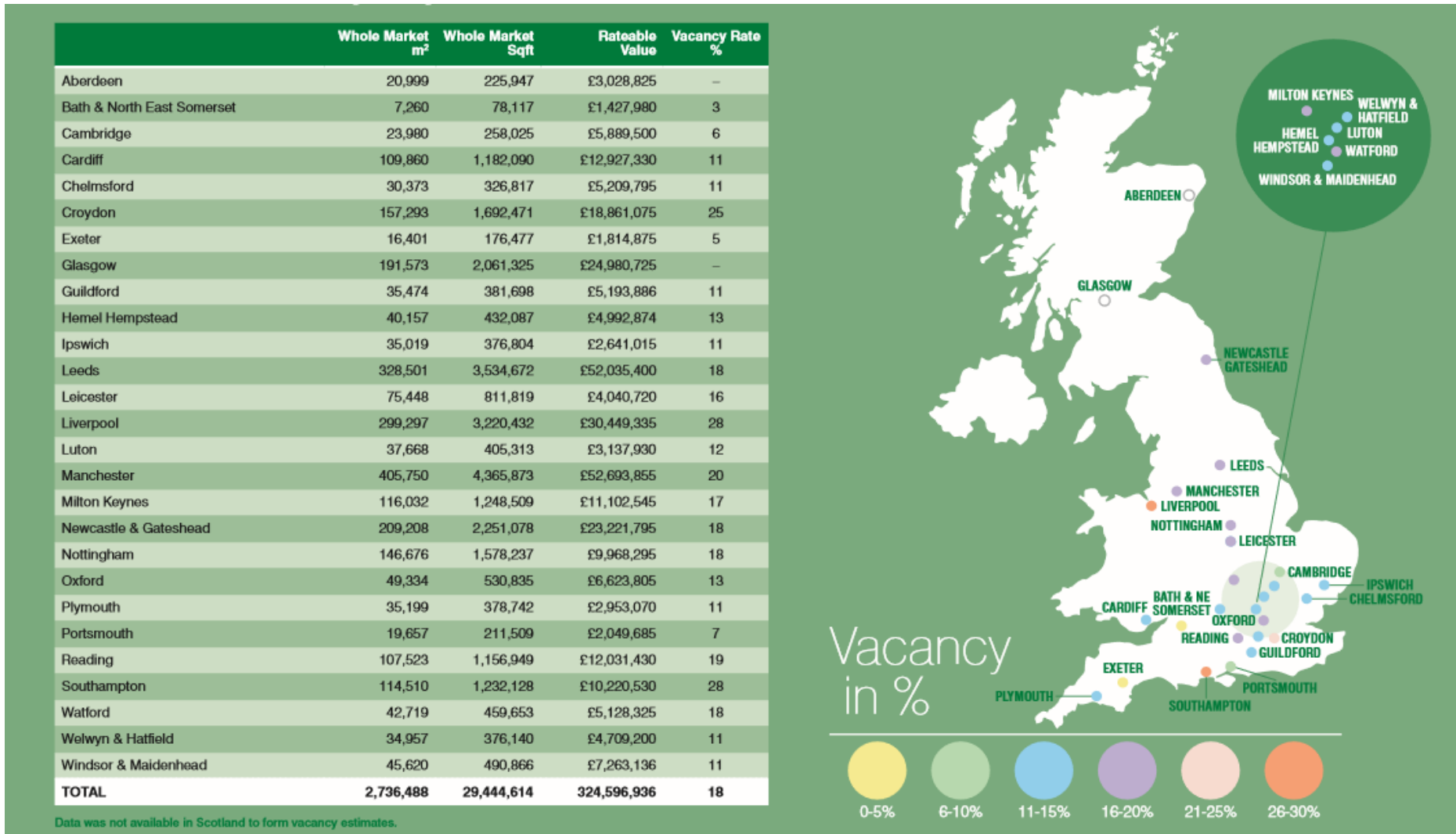
value and length of vacancy. Vacancy weight brings to the surface those secondary office properties that overhang the commercial office market most, 'acute vacancy.' Moreover, this section ends by further developing the alternative conceptualisation of structural vacancy set out in Section 2.2 by considering relative impact, rather than length of vacancy.

The intention is to provide a holistic account of secondary office vacancy, beginning with a broad description of the issue and ending with an analysis of the relative micro level characteristics of the phenomena in question. A great deal of deliberation took place in relation to the presentation of these figures. On the one hand, there is the challenge of making the information palatable to the reader due in large part to the quantity of locations in the research sample and the cumbersome nature of some of the large numbers. On the other hand, there is the risk of losing the enormity of the issue through aggregation and simplification. Consequently, the decision was taken to mostly let the numbers speak for themselves in order to depict the magnitude of the situation. However, where possible, each stage in analysis is also either accompanied by a percentage breakdown and/or an info-graphic to aid comprehension.

4.3.1 Revealing Commercial Office Vacancy in the UK

Although the main aim of this part of the study is to expose the nature, scale and location of secondary office vacancy in town and city centre locations in the UK, the isolation of such properties has led to the creation of a vacancy rate system for the UK. This is an original contribution to knowledge in itself and a process that can be repeated by Local and Central government in the appropriate circumstances (the last statistic for which was published in 2005). Figure 4.3 explicates this situation.

Figure 4.3 Vacant Office Floor Space in the UK



Exposing the Nature, Scale and Location of Secondary Office Vacancy

Figure 4.3 reveals the overall (prime and secondary combined) quantity of commercial office vacancy and proportionate rates of vacancy in the UK study area. First, Figure 4.3 reveals that the average rate of vacancy in the UK is 18%, while the range of vacancy rates started with a lowly 3% in Bath and Northeast Somerset and 5% in Exeter, all the way up to 28% in Southampton (nearby Portsmouth was significantly lower with 7%) and Liverpool.

The overall quantity of vacancy in the UK sample is 2.74 million m² (29.44 million ft²). Manchester has the largest quantity of vacant floor space with 406,000 m² vacant (4.4 million ft²), closely followed by Leeds with 329,000 M² (3.5 million ft²) and Liverpool with 299,000 m² (3.2 million ft²). At the other end of the spectrum is Bath and North East Somerset with only 7,200 M² (78,000 ft²) of vacant floor space available. By themselves these rates are relatively simplistic, not revealing much beyond a proportional percentage and quantum of floor space. However, what this information does indicate is the existence of vacancy, its sheer magnitude, and that in certain locations it constitutes a significant proportion of non-domestic floor space.

Before proceeding with further analysis, it is also important to remain circumspect when comparing this information. This is because national pictures of vacancy are influenced by issues of scale and proportionality. Yes, Manchester and Liverpool have the greatest quantum of vacant office stock in the UK, however, they are also two of the biggest office markets in terms of quantity. In contrast, although included in the CBRE market analysis, Bath and North East Somerset and Exeter are relative outliers because they are not recognised commercial centres and do not have large quantities of floorspace. In other words, it is not surprising that these locations have small quantities of vacancy.

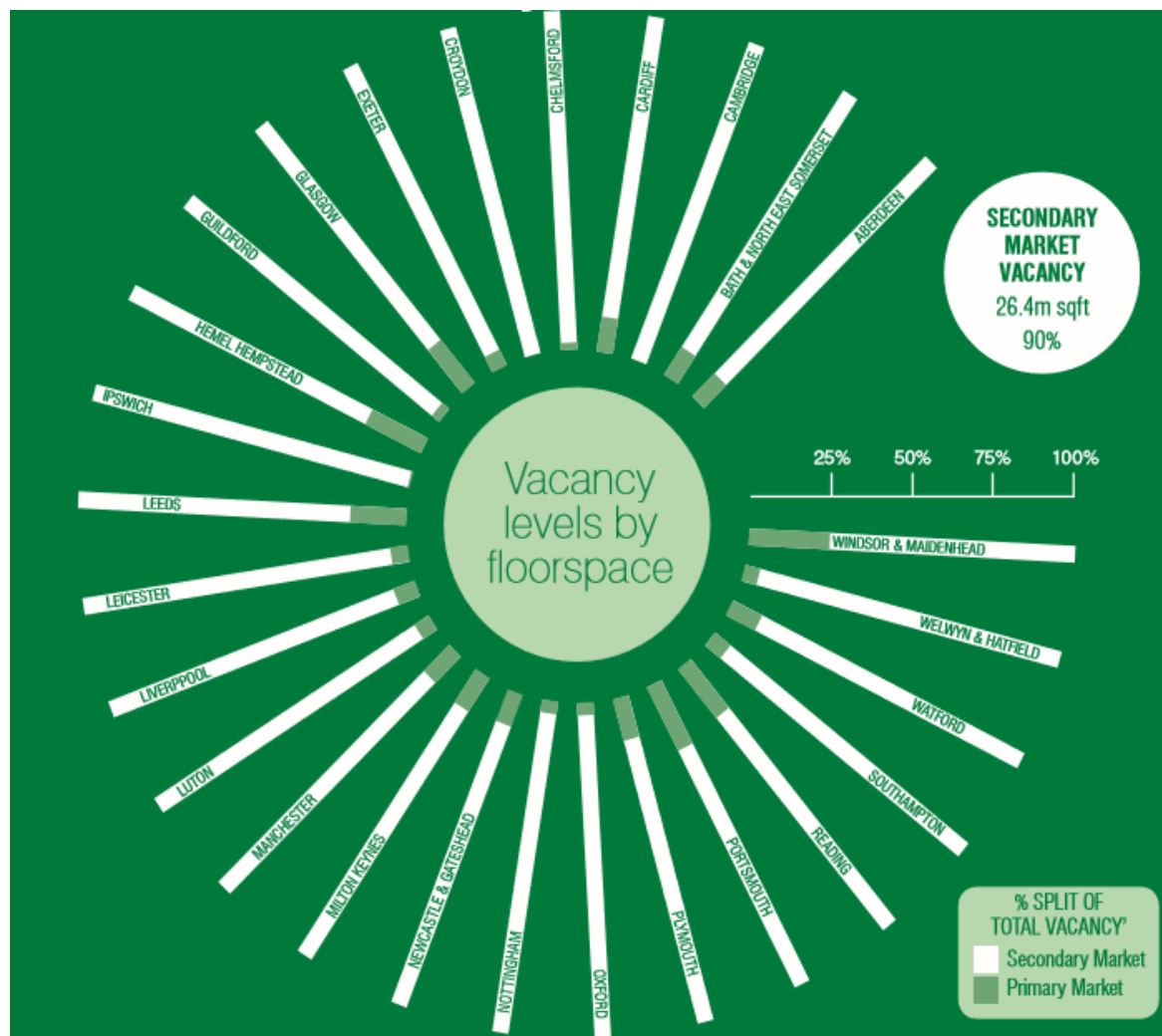
4.3.2 Exposing Secondary Office Vacancy

The following spiral interpretation (Figure 4.4) depicts commercial office vacancy in terms of proportion rather than quantum and begins to break commercial office vacancy down into prime and secondary segments. Corroborating the recent findings from all of the major office agencies, prime office property does not figure prominently in the depiction of vacancy. However, reading Figure 4.4 clockwise, what these figures also expose is the secondary office phenomena and its magnitude. In all locations, secondary

Exposing the Nature, Scale and Location of Secondary Office Vacancy

office property accounts for the greatest proportion of vacancy, in Croydon and Cambridge secondary office property accounts for all vacant floor space.

Figure 4.4 **Revealing Secondary Office Vacancy in the UK**



NB: Segmentation has been derived from floor space

The previous section indicated that the rate of vacancy in the UK is 18%. Yet, the spiral interpretation indicates that the prime market only accounts for 10% of this vacant stock. Vacant secondary stock accounts for 90% of all vacant floor space (echoing the proportionality described in Figure 4.3). The proportionality of the situation, although not directly proven, suggests an association between the prime office market and the natural rate of vacancy which is commonly thought to oscillate around the 4-10% mark (Tse and Webb, 2003). With the exceptions of Leeds and Glasgow, the highest rates of prime

vacancy are all in the South of the country. The highest are Windsor and Maidenhead with 25%, Portsmouth with 21% and Hemel Hempstead, Reading and Watford following closely behind. At 17%, it appears that Leeds has ample supply of prime office property awaiting occupation. This corroborates a recent story in the Estates Gazette (Simmons, 2015) which ponders who is going to occupy all of the new prime space in the centre of Leeds. Interestingly, the same article argues that secondary office space is increasingly the preferred choice for growing businesses.

Table 4.1 reflects this situation in terms of floor space. Available prime floor space accounts for 279,812 m² (3, 010, 776 ft²). Now that the overall quantities of vacant floor space are revealed, the Southern towns and cities fall away and the regional centres, those with the biggest commercial office markets, rise to the top of the ranking. Continuing the observation in relation to the previous figure, Leeds has the greatest quantity of available prime floor space with 55,985m² (602,403 ft²), Manchester has 44,644 m² (480,373 ft²), while Glasgow has 29,802 m² (320,670 ft²). The previous section has already observed that Croydon and Cambridge do not have any available prime office floor space, however, Ipswich, Chelmsford, Bath and North East Somerset and Exeter have less than 1,000 m² of available prime floor space (although they also have small gross market size).

Table 4.1 Floor Space Proportions

	PRIMARY MARKET		SECONDARY MARKET	
	m ²	Sqft	m ²	Sqft
Aberdeen	2,017	21,705	18,982	204,241
Bath & North East Somerset	716	7,704	6,544	70,413
Cambridge	–	0	23,980	258,025
Cardiff	11,549	124,266	98,311	1,057,824
Chelmsford	628	6,757	29,745	320,060
Croydon	–	0	157,293	1,692,471
Exeter	846	9,099	15,556	167,377
Glasgow	29,802	320,670	161,771	1,740,656
Guildford	1,008	10,841	34,466	370,857
Hemel Hempstead	7,572	81,473	32,585	350,615
Ipswich	194	2,087	34,825	374,717
Leeds	55,985	602,403	272,516	2,932,269
Leicester	4,105	44,173	71,343	767,646
Liverpool	20,893	224,805	278,404	2,995,627
Luton	1,942	20,893	35,727	384,419
Manchester	44,644	480,373	361,106	3,885,500
Milton Keynes	13,656	146,944	102,376	1,101,565
Newcastle & Gateshead	21,033	226,315	188,175	2,024,763
Nottingham	5,576	59,992	141,101	1,518,245
Oxford	1,881	20,241	47,453	510,594
Plymouth	4,474	48,140	30,725	330,602
Portsmouth	4,122	44,353	15,535	167,157
Reading	20,042	215,654	87,481	941,295
Southampton	6,847	73,674	107,663	1,158,454
Watford	7,381	79,416	35,338	380,237
Welwyn & Hatfield	1,677	18,047	33,280	358,093
Windsor & Maidenhead	11,222	120,751	34,397	370,116
TOTAL	279,812	3,010,776	2,456,676	26,433,837

Yet, available secondary floor space accounts for 2,456,676m² (26,433,837ft²). The same trend in relation to the regional centres is evident in secondary office space. However, Manchester has the greatest quantity with 361,106 m² (3,885,500ft²), followed by Liverpool with 278,404 m² (2,995,627 ft²), followed by Leeds with 272,516 m² (2,932,269ft²) and then Newcastle/Gateshead with 188,175 m² (2,024,763ft²). At the other end of the scale is Bath and

North East Somerset which has 6,544 m² (70,413 ft²), Portsmouth has 15,535 m² (167,157 ft²) and Exeter 15,556 m² (167,377 ft²).

4.3.3 Vacancy Eras

Table 4.2 Eras of Secondary Office Vacancy

	-War	+War	1960/70	1980	1990	2000+	Total
Bath and North East							
Somerset	38	0	62	0	0	0	100
Cambridge	6	9	31	19	23	12	100
Cardiff	30	0	32	11	24	2	100
Chelmsford	36	1	41	8	14	0	100
Croydon	5	0	84	9	1	0	100
Exeter	15	0	30	30	25	0	100
Guildford	50	0	17	14	19	0	100
Hemel Hempstead	21	0	35	21	21	1	100
Ipswich	48	0	35	5	10	3	100
Leeds	38	3	22	9	29	0	100
Leicester	42	5	31	1	20	0	100
Liverpool	69	2	17	2	10	0	100
Luton	19	1	36	21	23	0	100
Manchester	59	2	33	1	4	2	100
Milton Keynes	6	1	44	18	30	2	100
Newcastle Gateshead	39	6	44	6	4	1	100
Nottingham	45	6	20	11	16	2	100
Oxford	32	13	24	4	22	5	100
Plymouth	57	8	23	3	10	0	100
Portsmouth	21	4	48	9	18	0	100
Reading	16	0	47	23	14	0	100
Southampton	21	1	54	5	19	0	100
Watford	21	2	71	0	7	0	100
Welwyn Hatfield	24	0	41	0	30	5	100
Windsor and maidenhead	38	0	36	25	0	1	100
Aberdeen	58	0	21	0	13	8	100
Glasgow	68	0	25	0	8	0	100
Total	34	2	37	9	15	2	100

Table 4.2 and Figure 4.5 make it immediately apparent that there is a dearth of 2000+ (2%), post war (2%), 1980's (9%) and 1990's (15%) office vacancy. Collectively, these eras only account for 28% of vacant secondary stock. In contrast, pre-war (34%) and 1960's and 1970's (37%) property collectively accounts for 71% of vacant secondary stock.

Figure 4.5 **Visualising Eras of Secondary Vacancy**



The history of offices presented in Chapter 2 suggests several reasons for this variegation (not least that the pre-war period covers more time). The pre-war period (especially around the turn of the 20th century) and the 1960's and 1970's are synonymous with firstly the birth of commercial office property and then the coalescence of the modern office market. Although there was significant office development in North America in the post war period (and to a lesser extent in Central London) it did not explode elsewhere in the UK until the 1960's as post war construction concentrated on housing replacement amidst conditions of austerity. Hence the lack of discernible development immediately after World War 2 is predictable. At the opposite end of the scale, 2000+ property is more likely to be in the prime office space category. Less straightforward to explain is the dearth of 1980's and 1990's office property in the study database.

This era of secondary property is more likely to reside outside of town and city centre areas, and at least anecdotally, is known to suffer from vacancy (something supported in international literature where office park vacancy has reached endemic levels in the Netherlands and North America, see for instance Remoy, 2010). Yet, it appears with little regularity in the database. Consequently, the results for these eras of development are viewed with suspicion and although this observation is unproven, are presumed to be higher. This is a view supported by respondents who indicate that it is these outer locations that use empty property rate avoidance techniques with most regularity. According to research participants this is particularly the case in some of the former Enterprise Zone areas where local authorities have reached agreement with landlords to informally extend exemption periods (this does not show up as a loss on local authority books as they were never in receipt of business rates from these buildings in the first place).

So, there are two clear eras of vacancy, the first, pre-war, characterised mostly by those properties built around the turn of the 20th century, and those properties constructed during the 1960's and 1970's, as the commercial office market exploded. Yet, this trend is not uniform throughout the UK. Certain locations, because of their historical evolution, have very different vacant secondary property characteristics. Liverpool, Glasgow, Aberdeen, Manchester, Nottingham, Plymouth and Guildford, as a consequence of their age and periods of economic development, have greater quantities of pre-war properties. In these locations more than 50% of secondary office vacancy is pre-war, and in the case of Glasgow and Liverpool this figure is just below 70%.

In contrast, Milton Keynes, a new town, has virtually no vacant secondary office property pre dating 1960, yet 44% of vacant office stock was built in the 1960's and 1970's. Similarly, Croydon, often known colloquially as 'London's back office,' was almost entirely built out in the 1960's and 1970's in order to house large scale public and private sector organisations seeking low cost alternatives to Central London. 84% of the vacant secondary office stock in Croydon was built during this period. Watford and Reading share similar development pathways and vacancy characteristics. 71% of office vacancy was constructed during the 1960's -1970's period in Watford and 47% in Reading.

Secondary office vacancy is more evenly balanced between post war and the 1960's - 1970's development eras in Newcastle/Gateshead. Firstly, this reflects the age of this location and then the urban experiment during the 1960's to create the Brasilia of the North (led by the then City Council Leader T Dan Smith) which resulted in the destruction of large sections of the post war commercial centre. Cambridge, Guildford, Hemel Hempstead, Luton, Milton Keynes and Reading have a larger proportion of 1980's and 1990's vacant office stock. In each location these combined eras account for more than 40% of stock, while in Exeter this period accounts for 55% of stock. Chapter 5 indicates that it is these locations that may have difficulty justifying agile re-use, in large part due to poor build quality, inferior location (often on the periphery) and lack of identity associated with those properties constructed during the 1980's and 1990's.

4.3.4 The Cost of Vacancy

So far we have revealed secondary office vacancy, its floor space characteristics and its historical evolution. The next section builds a picture of the cost of secondary commercial office vacancy. First of all, it uses rateable value (see Chapter 3 for an explication of this method) to illustrate loss in rent, then empty property rates to estimate holding cost and finally the development of an indicator, compound loss, which estimates the overall cost of commercial office vacancy. Table 4.3 begins to depict this situation, first of all indicating total rental loss and then dividing this into the prime and secondary office market.

Table 4.3 Rent loss in the UK

	Overall	Prime	%	Secondary	%
Manchester	£52,693,855.00	£7,812,230.00	15	£44,881,625.00	85
Leeds	£52,035,400.00	£15,330,050.00	29	£36,705,350.00	71
Liverpool	£30,449,335.00	£2,666,175.00	9	£27,783,160.00	91
Glasgow	£24,980,725.00	£5,467,700.00	22	£19,513,025.00	78
Newcastle Gateshead	£23,221,795.00	£3,452,300.00	15	£19,769,495.00	85
Croydon	£18,861,075.00		0	£18,861,075.00	100
Cardiff	£12,927,330.00	£1,873,975.00	14	£11,053,355.00	86
Reading	£12,031,430.00	£3,234,200.00	27	£8,797,230.00	73
Milton Keynes	£11,102,545.00	£1,469,100.00	13	£9,633,445.00	87
Southampton	£10,220,530.00	£884,750.00	9	£9,335,780.00	91
Nottingham	£9,968,295.00	£543,500.00	5	£9,424,795.00	95
Windsor and maidenhead	£7,263,136.00	£2,041,000.00	28	£5,222,136.00	72
Oxford	£6,623,805.00	£36,150.00	1	£6,587,655.00	99
Cambridge	£5,889,500.00		0	£5,889,500.00	100
Chelmsford	£5,209,795.00	£313,250.00	6	£4,896,545.00	94
Guildford	£5,193,886.00	£542,500.00	10	£4,651,386.00	90
Watford	£5,128,325.00	£1,189,975.00	23	£3,938,350.00	77
Hemel Hempstead	£4,992,874.00	£880,254.00	18	£4,112,620.00	82
Welwyn Hatfield	£4,709,200.00	£1,308,500.00	28	£3,400,700.00	72
Leicester	£4,040,720.00	£524,450.00	13	£3,516,270.00	87
Luton	£3,137,930.00	£61,100.00	2	£3,076,830.00	98
Aberdeen	£3,028,825.00	£343,700.00	11	£2,685,125.00	89
Plymouth	£2,953,070.00	£579,275.00	20	£2,373,795.00	80
Ipswich	£2,641,015.00	£20,100.00	1	£2,620,915.00	99
Portsmouth	£2,049,685.00	£683,300.00	33	£1,366,385.00	67
Exeter	£1,814,875.00	£119,700.00	7	£1,695,175.00	93
Bath and North East Somerset	£1,427,980.00	£84,750.00	6	£1,343,230.00	94
Total	£324,596,936	£51,461,984.00	17	£273,134,952	83

Within the study area, commercial office vacancy accounts for just over £324m lost rent per annum. Of this, prime office vacancy accounts for just over £51m (17%) in lost rent

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per annum, while secondary office vacancy accounts for £273m (83%) in lost rent per annum. Again the regional centres dominate; vacancy in Manchester and Leeds accounts for more than £52m in both areas per annum. In Manchester, prime property accounts for £7.8m (15%) in lost rent per annum, while secondary property accounts for £44.8m (85%) in lost rent per annum. In Leeds, prime office vacancy accounted for £15.3m (29%) in lost rent, while secondary office vacancy accounts for £36.7m (71%) in lost rent per year.

At the other end of the spectrum are Exeter and Bath and North East Somerset, vacancy in both locations accounts for less than £2m in lost rent per year. However, the separation between prime and secondary continues. In Exeter prime office vacancy accounts for £119,700 (7%) lost rent per annum, while in Bath and North East Somerset it accounts for £84,750 (6%) lost rent per annum. In contrast secondary office vacancy accounts for £1.7m (93%) lost rent per annum in Exeter and £1.3m (94%) lost rent per annum in Bath and North East Somerset. This section has laid out the cost of lost rent per annum, the next section estimates the holding costs associated with commercial office vacancy.

4.3.5 Holding Cost

Table 4.4 Holding Cost in the UK

	Whole market	Secondary Market
Manchester	£25,819,988.95	£21,991,996.25
Leeds	£25,497,346.00	£17,985,621.50
Liverpool	£14,920,174.15	£13,613,748.40
Glasgow	£12,240,555.25	£9,561,382.25
Newcastle Gateshead	£11,378,679.55	£9,687,052.55
Croydon	£9,241,926.75	£9,241,926.75
Cardiff	£6,230,973.06	£5,416,143.95
Reading	£5,895,400.70	£4,310,642.70
Milton Keynes	£5,440,247.05	£4,720,388.05
Southampton	£5,008,059.70	£4,574,532.20
Nottingham	£4,884,464.55	£4,618,149.55
Windsor and maidenhead	£3,558,936.64	£2,558,846.64
Oxford	£3,245,664.45	£3,227,950.95
Cambridge	£2,885,855.00	£2,885,855.00
Chelmsford	£2,552,799.55	£2,399,307.05
Guildford	£2,545,004.14	£2,279,179.14
Watford	£2,512,879.25	£1,929,791.50
Hemel Hempstead	£2,446,508.26	£2,015,183.80

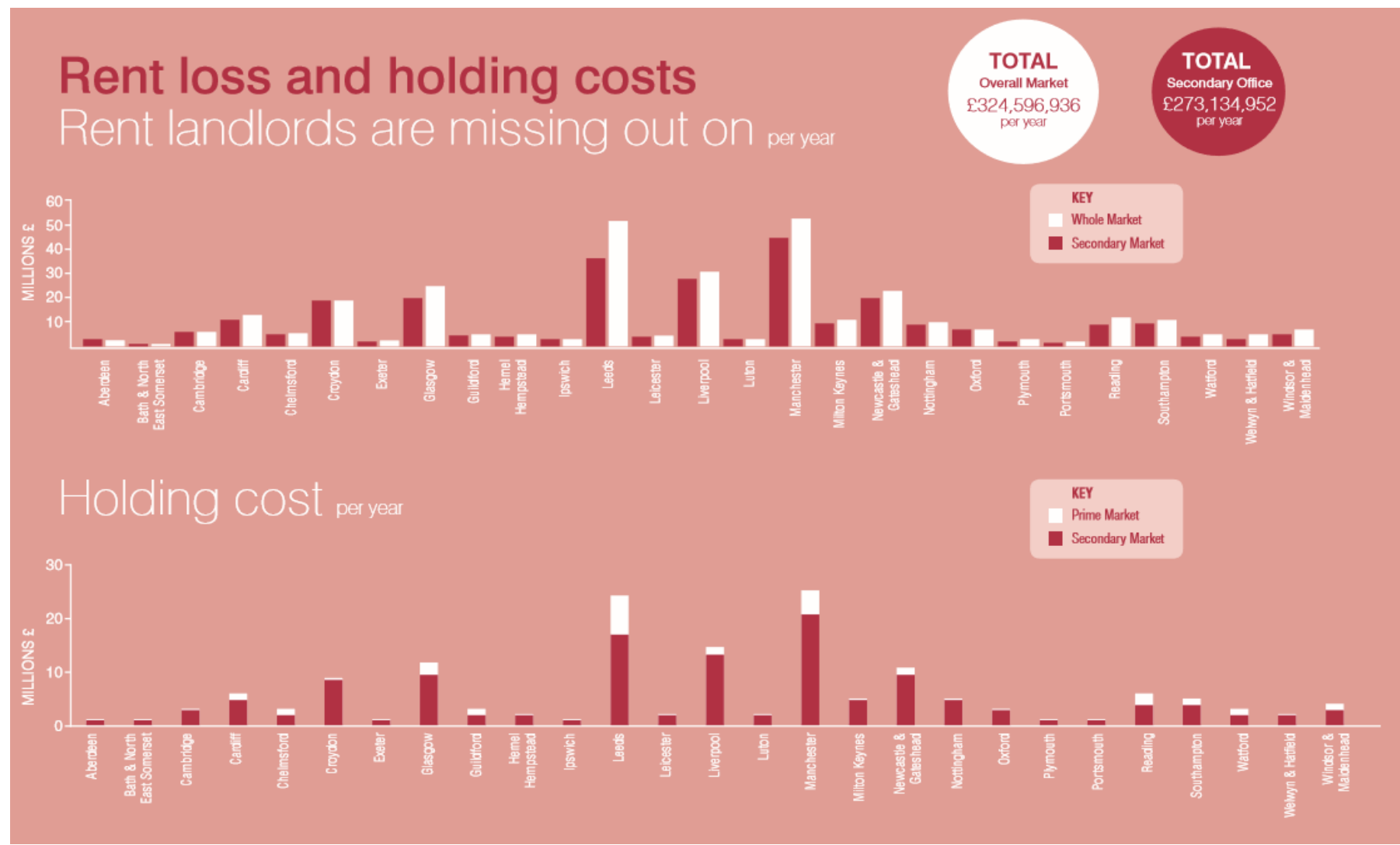
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Welwyn Hatfield	£2,307,508.00	£1,666,343.00
Leicester	£1,979,952.80	£1,722,972.30
Luton	£1,537,585.70	£1,507,646.70
Aberdeen	£1,484,124.25	£1,315,711.25
Plymouth	£1,447,004.30	£1,163,159.55
Ipswich	£1,294,097.35	£1,284,248.35
Portsmouth	£1,004,345.65	£669,528.65
Exeter	£889,288.75	£830,635.75
Bath	£699,710.20	£658,182.70
Total	£158,949,080	£133,836,126

Holding costs refer to the money spent to keep and maintain commercial office stock in dormant form when it is not generating income. It represents an opportunity cost as the presence of the vacant property means that it is not being sold and it is money that could be spent elsewhere. Empty property rates are used in this thesis to estimate the cost of vacant office property holding cost. This method is likely conservative as it does not include the actual costs of securing and maintaining a vacant office property, only the amount of empty property tax that a landlord must pay when a commercial office property falls vacant, after an initial 3-month exemption period. Empty property rates replace the business rates that would be accrued from a business tenant if the property was let. It is calculated in relation to the property's rateable value using the business rate multiplier (which is adjusted each year in line with inflation). The multiplier is the number of pence per pound that a tenant or landlord must pay in business rates or empty property tax (depending if a building is let or vacant).

The current business rate multiplier is 49.3% and has been applied to the vacant office rateable value data to estimate holding cost (The multiplier is different in Wales and Scotland and has been modified in these locations accordingly). Landlords pay £159m in holding costs per annum in the UK study area, while landlords with vacant secondary offices pay £134m of this total per annum. In parallel with the rental loss figures, Table 4.4 indicates that Manchester and Leeds have the highest holding cost figures, landlords in Manchester pay £25.8m per annum (£21.9m of this is secondary), while landlords in Leeds pay 25.4m (£17.9m of this is secondary) per annum. At the opposite end of the spectrum is Exeter and Bath and North East Somerset where landlords pay £889k (831k of this is secondary) and £700k (658k of this is secondary) in holding costs per year. Figure 4.3.5a visualises both rental loss and holding cost in order to give an initial approximation of the cost of vacancy.

Figure 4.6 Visualising the Cost of Vacancy



4.3.6 Indicating the Cost of Vacancy

‘Compound loss’ combines the two previous stages of analysis. It provides a simple means of valuing commercial office vacancy, within the market and on an individual property basis. ‘Compound loss’ is a composite indicator employing rateable value as an approximate measurement of rental value and empty property rate value as an approximate measure of holding cost.

$$CL = CRV + EPR$$

Where:

CRV = Cumulative Rateable
Value

EPR = Empty Property rates

CL = Compound Loss

'Compound loss' has utility on several fronts:

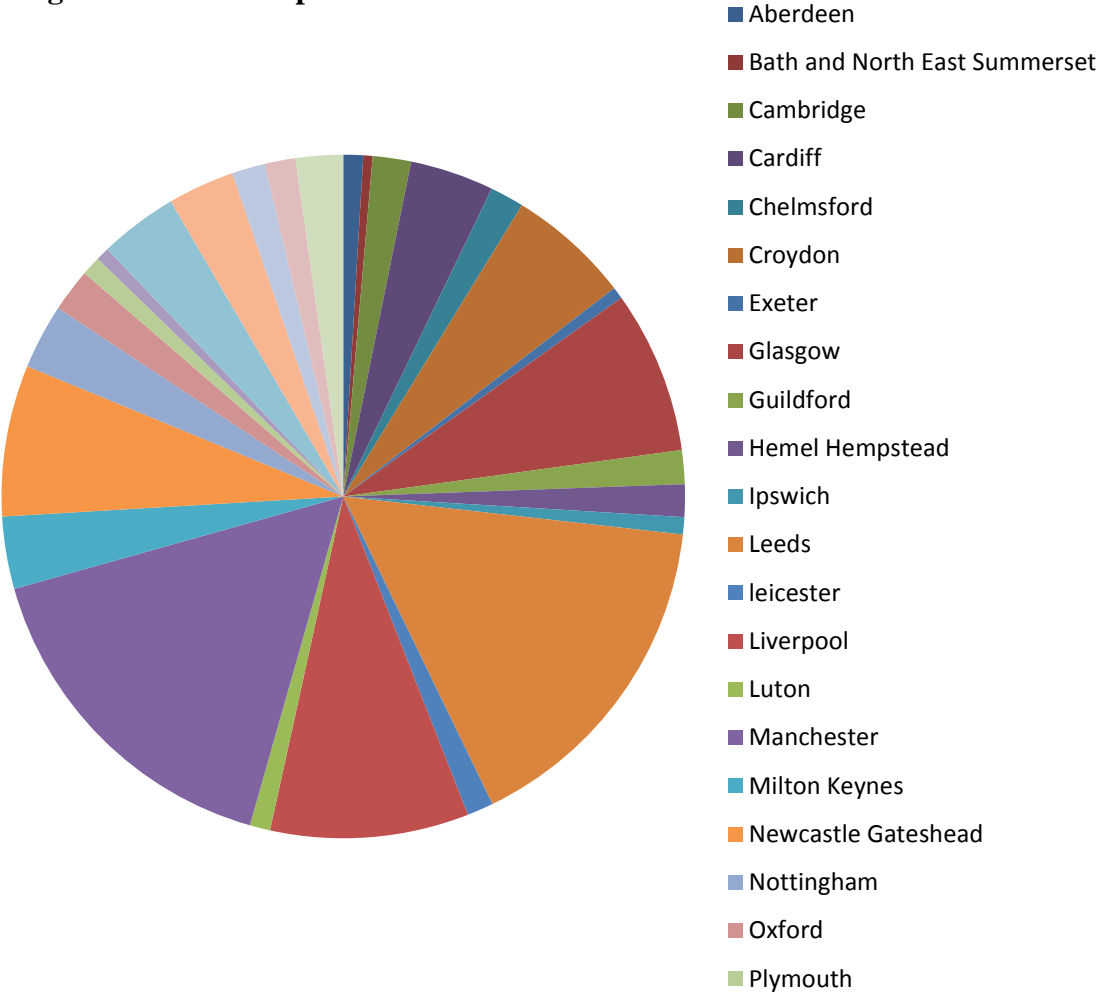
1. It can be used to represent the present value of vacancy over a variety of geographical scales, starting at the individual building and via aggregation all the way up to the city and region;
2. It can also be used to evaluate and stress-test investment portfolios and potential acquisitions;
3. On an individual property basis, it can be used to justify intervention, finding common ground between book and residual valuation

Table 4.5 Compound Loss in the UK

	Compound Loss Per Year (Whole market)	Compound Loss Per Year (Secondary market)
Aberdeen	£4,512,949	£4,000,836
Bath & North East Somerset	£2,127,690	£2,001,413
Cambridge	£8,775,355	£8,775,355
Cardiff	£19,158,303	£16,469,499
Chelmsford	£7,762,595	£7,295,852
Croydon	£28,103,002	£28,103,002
Exeter	£2,704,164	£2,525,811
Glasgow	£37,221,280	£29,074,407
Guildford	£7,738,890	£6,930,565
Hemel Hempstead	£7,439,382	£6,127,804
Ipswich	£3,935,112	£3,905,163
Leeds	£77,532,746	£54,690,972
Leicester	£6,020,673	£5,239,242
Liverpool	£45,369,509	£41,396,908
Luton	£4,675,516	£4,584,477
Manchester	£78,513,844	£66,873,621
Milton Keynes	£16,542,792	£14,353,833
Newcastle & Gateshead	£34,600,475	£29,456,548
Nottingham	£14,852,760	£14,042,945
Oxford	£9,869,469	£9,815,606
Plymouth	£4,400,074	£3,536,955
Portsmouth	£3,054,031	£2,035,914
Reading	£17,926,831	£13,107,873
Southampton	£15,228,590	£13,910,312
Watford	£7,641,204	£5,868,142
Welwyn & Hatfield	£7,016,708	£5,067,043
Windsor & Maidenhead	£10,822,073	£7,780,983
TOTAL	£483,546,016	£406,971,078

Table 4.5 depicts this situation on a per annum basis. While Figure 4.7 describes the relative proportionality of this situation.

Figure 4.7 Compound Loss in the UK



Compound loss is based on industry established valuation data procedures. Rateable valuation and empty property rates are carried out consistently across all areas in the UK and are, in principle, a matter of public record and therefore ‘open data.’ Remoy (2010) indicates that the primary obstruction to office building re-use is an inability to value vacant office buildings. Compound loss accounts for this deficit by providing a simple basis for valuing the present value of vacant secondary office properties.

Compound loss accounts for £484m (£407m of this secondary) per annum in the UK study area. In parallel with the findings in the previous two sections, Manchester and Leeds have the highest compound loss totals. Manchester has an overall figure of £79m per annum, secondary office vacancy accounts for £67m of this total. Leeds has an overall compound figure of £76m per annum, secondary office vacancy accounts for £55m of this total. At the opposite end of the spectrum lie Exeter and Bath and North

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East Somerset. Exeter has an overall compound figure of £2.7m per annum, secondary office vacancy accounts for £2.5m of this total. Bath and North East Somerset has an overall compound figure of £2.1m per annum, while secondary office vacancy accounts for £2m of this total.

4.3.7 Exposing the Impact of Secondary Office Vacancy

When Wilkinson et al (2009) appraised the city of Melbourne initiative to adapt 1200 office buildings before 2020 (in order to help achieve carbon neutrality), they openly queried how the city would select these buildings,

'Is it medium-sized, small or large buildings? Other questions arise such as the following: Could the city identify which buildings are most likely to be adapted prior to 2020? More importantly, how do you decide which buildings should be adapted? There is a need to address these knowledge gaps for the city to fulfil its aspirations'

(Wilkinson et al., 2009:4).

This taps into a broader question, that frames this section, how do you identify commercial office vacancy? The first part of this section has filled this deficit in the UK, the next section presents a simple methodological system called 'vacancy weight,' which has been developed in order to isolate those vacant secondary office properties that overhang the UK most. Vacancy weight combines the cumulative sum of rateable value (CRV) and average length of vacancy (ALV) for each vacant office property in each location in order to create a Vacancy Impact Score (VIS) for each property. It then ranks all of these properties according to relative VIS. For the purpose of this study those properties with the highest VIS score overhang the office market most.

Vacancy weight can be expressed in the following way,

$$\text{Vacancy Weight} = \frac{\text{CRV} \times \text{ALV}}{100} = \text{VIS}$$

Where:

CRV = Cumulative
Rateable Value

ALV = Average Length
Vacancy

VIS = Vacancy Impact
Score

Vacancy weight is based on and takes advantage of the statutory rateable value system in England and Wales (explained in chapter 3). Traditional methods of vacancy assessment rely upon the relative length of vacancy to define the impact of vacant offices (see Remoy, 2010 and Section 4.2 for a discussion of this method in relation to structural vacancy). However, this method does not take into account the contingent market characteristics that influence the office property sector at the micro level. In response, vacancy weight, and its use of rateable value, is considered an adequate measurement of the contingent characteristics of commercial real estate. Rateable value takes into account building size, floor space, location, tenancy and prestige and generally the overall 'market' process (Bai, 2007) and places a valuation on this combination of factors. Of course, length of vacancy is still an obvious indicator of vacancy impact. Length of vacancy is therefore retained but is combined with rateable value in order to isolate those properties at the micro scale that impact the office market most.

4.3.8 Acute Vacancy

The relative ranking of vacant office property based on the VIS allows some simple segmentation to take place.

Table 4.6 Acute vacancy in the UK

	RV	%	No
Chelmsford	£3,144,575.00	72	8
Croydon	£12,746,100.00	70	12
Portsmouth	£762,850.00	65	8
Liverpool	£16,489,180.00	62	21
Newcastle Gateshead	£10,167,650.00	58	28
Southampton	£4,246,850.00	54	12
Reading	£4,318,350.00	53	12
Glasgow	£10,163,950.00	52	24
Leicester	£1,428,540.00	50	13
Luton	£1,274,150.00	48	10
Cardiff	£4,544,175.00	47	17
Manchester	£19,361,490.00	45	37
Windsor and maidenhead	£2,266,940.00	43	8
Ipswich	£981,525.00	41	11
Hemel Hempstead	£1,394,170.00	41	7
Bath	£423,000.00	40	3
Leeds	£12,424,690.00	40	37
Watford	£1,235,550.00	40	4
Milton Keynes	£3,572,100.00	39	15
Exeter	£646,950.00	39	6
Nottingham	£3,246,560.00	37	23
Oxford	£2,027,625.00	37	9
Guildford	£814,750.00	33	5
Aberdeen	£766,900.00	29	6
Plymouth	£440,500.00	28	8
Welwyn Hatfield	£791,275.00	26	3
Cambridge	£1,346,500.00	23	7
Total	£110,096,045.00	44	316

The top 10% (316 properties) slice of vacant office properties in the UK, named acute vacancy for the purposes of this thesis, account for 44% of all secondary office vacancy and £110m in lost rent (Table 4.6) describes this situation). This means that if market actors focused on this market segment, secondary vacancy could be almost halved. Illustrating this situation, in Chelmsford 8 secondary office buildings account for 72% of secondary office vacancy, in Croydon 12 secondary office buildings accounts for 70% of secondary office vacancy, in Portsmouth 8 secondary office buildings account for

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65% of secondary office vacancy and in Liverpool 21 secondary office buildings account for 62% of secondary office vacancy. At the opposite end of the spectrum 7 secondary office buildings account for 23% of secondary office vacancy in Cambridge, in Welwyn Hatfield, 3 secondary office buildings account for 26% of secondary office vacancy and 8 secondary office buildings account for 28% of secondary office vacancy in Plymouth.

Interestingly, 'acute vacancy' reveals that those vacant office properties that overhang the office market most are not necessarily those commercial office properties that are vacant for the longest. Relative location, size, value and reputation also play significant roles in defining impact of vacancy. Wilkinson et al (2009) argue that commercial office vacancy is ill defined and difficult to isolate. Acute vacancy reveals the possibility of considering this situation in a different way, focusing on impact, rather than length of vacancy.

4.4 The Causes of Secondary Office Vacancy

The previous section set out a physical depiction of the nature, scale and location of secondary office vacancy in the UK. Findings suggest that there is more than enough office property but not necessarily of the right type, at the right time or in the right location. Previous accounts of office vacancy and its potential amelioration have mostly considered causes through secondary literature review. This section addresses this deficit through empirical investigation. This situation is complex but we can begin to understand the situation by focusing on its underlying causes. In particular, the mechanisms that causes this situation;

- The structural change in the nature of demand

And the cross cutting mechanisms and contingencies that intervene in its manifestation;

- Material considerations
- Culpable obsolescence
- Government policy
- The structure of local rental markets
- Secondary institutions and education
- Planned obsolescence and enhanced specification

The cross cutting themes and primary generative mechanism were derived from the practitioner Delphi study following a process of thematic coding and grounded theory development. This approach is set on in detail in Section 3.10 and thematic coding followed a constant state of revision and comparison.

4.4.1 The Changing Nature of Demand

Rather, than the traditional focus on physical design, a recurrent theme throughout Chapters 4, 5 and 6 is the importance of the end user. A leading developer indicates that,

"Office buildings are rarely built with the end user in mind, rather tried and tested methods of investment and development appraisal prevail."

The consequence of this situation is emphasised by a leading developer,

"The end user need and the importance of design is rarely emphasised, this leads to standard, mass produced building typologies with similar specifications which all become obsolete at the same time...This means that whole building typologies are at systemic risk from obsolescence due to relatively trivial demand changes or specification change."

Instead, research participants indicate that the increased specification, (demanded by the professional services in certain locations) in new prime office construction is exacerbating this situation,

"Increased prescriptive specification leads to more functional atypicality, quicker redundancy and consequent difficulty in re-use. Increasing specification is looking for a market advantage in the short term but this leads to redundancy sometimes before the building is even let and makes re-use very difficult"

(Urban Designer).

Furthermore,

"Buildings have not become more flexible as time goes on, quite the opposite. We are not learning; we are getting worse. Flexibility is the key and we are anything but"

(Partner, Investment and Development, Global Property Consultancy).

Outside of Central London the consensus viewpoint is that there has been a profound structural change in the way offices are used because of a combination of issues which include globalisation, technological change, new ways of working, environmental legislation and Government rationalisation. This was the dominant theme throughout the analysis of the Delphi Study, with research participants time and again indicating the existence of this situation above the additional cross cutting themes identified in the following sections (Section 3.10 gives a detailed account of the methodological process used to reveal this situation). Indeed, research participants indicate that the highly specified production of commercial office space is travelling in the opposite direction to the contemporary demands of occupier demand. The result according to the CEO of a leading service office provider is that,

"Landlords prefer to see their buildings underperform in the expectation of a long lease on the horizon. The business community no longer views this type of lease favorably."

Furthermore,

"The new economy is based on small businesses and entrepreneurs. However, the office industry is not responding to these new needs, regularly building huge buildings focused on big tenants."

Research participants indicate that above and beyond the traditional real estate market cycles (which still operate to a certain degree, especially in Central London), occupiers

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simply do not want as much office space as they traditionally did and they want it in very different ways. Indeed,

"The traditional view of office accommodation and its direct link to economic development no longer exists...There has been a profound structural change in the nature of demand...things are fundamentally different...you cannot just fill cities with offices and expect the market to work its magic anymore...yet we still do"

(Fund Manager).

"The point is that demand is not static, it will always be dynamic and increasingly so... however, buildings do not and often cannot react"

(Leading Architect).

Not only has the nature of demand changed, it continues to do so at an increasing rate. The nature of IT requirements (described initially in Chapter 2) illustrate this situation. A Property Advisor indicates that,

"The need for computer and internet infrastructure made many historical buildings obsolete, especially those built in the 1960's. New buildings from the late 1970's and early 1980's onwards were built with IT in mind. However, the advent of wireless technology has moved on again and these buildings have been rendered obsolete."

Continuing the recurrent theme of static property and dynamic demand, a Property Manager argues,

"The fact that demand has changed is not a plain issue, rather, it is about the nature of change, its speed and its volatility...yet, buildings are not built, financed or valued for change...they presume a degree of stability."

Illustrating this situation, research participants indicate that alterations in ways of working have left large amounts of secondary office properties underused and vacant.

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The nature of demand has moved on leaving physical office design and its traditional institutions behind.

"There is simply less demand for office space...it is a question of numbers"

(Architect).

"Change is two-fold, demand has reduced...what is left wants much more from their buildings"

(The Head of Scottish Capital Markets at a leading office agency).

The result is the emergence of the discerning tenant, who,

"May want more specification but also wants flexibility and convenience...a one size fits all office model no longer works"

(Property Manager).

"Tenants are much savvier now, they are less likely to only accept a rent free period only. They are also interested in buildings' environmental credentials and what they are actually paying for with their service charge - enhanced value or the consequences of poor performance?"

(Head of Office Agency).

This manifestation is not restricted to the tenant, employers increasingly demand more from property and use it as a tool in employee recruitment,

"The employer and increasingly the employees simply demand more from their work environment"

(Property Advisor).

"Property is now an important tool in employee recruitment, when companies struggle to differentiate themselves. This is clearly evident in professional services where building quality and performance is a tool of differentiation and recruitment."

(Executive Director of Global Real Estate).

Furthermore, reflecting observations in Chapters 1 and 2, research participants did not only question the physical design of the contemporary office building, they also questioned the very notion of the office,

"It is not just physical offices that are often redundant, the very concept of the office is losing salience as the boundaries between use dissolve"

(Leading Architect).

Summarising this situation, an Investment Agent argued that,

"Demand for offices is dwindling yet more buildings are being built. A circulation of diminishing demand which coincides with a destructive cycle of depreciation in the built environment is taking place"

This structural change in the nature of occupier demand has been identified as the main generative mechanism underlying the incidence of secondary office vacancy in the UK. In the same way as a run on a bank, or the lighting of a match at a bonfire, it has led to widespread secondary office vacancy and confusion in relation to how this might be managed and ameliorated. These findings corroborate the arguments in Chapter 2 in relation to human behaviour and its centrality in the commercial real estate process. Research participants indicate that occupiers have voted with their feet and now require new ways of working.

Concluding this section (and echoing Lizieri, 2009 in Chapter 2), the CEO of a leading serviced office provider argues that,

"Office buildings are only worth what their occupiers want"

Reflecting upon this central argument, research participants indicate that this primary mechanism does not act alone, instead it intersects with a variety of other mechanism and contingencies which are set out in the proceeding sections.

4.4.2 Material Considerations

Chapters 1 and 2 justified the movement away from an inherently physical account of vacancy, because this area is already well researched and because it can lead to physically deterministic accounts. However, office buildings are fundamentally physical, as such it would be unwise to ignore the issue altogether. Rather, physical characteristics should be located in wider contingent circumstances. Research participants did not identify physical issues as the primary factor in secondary office vacancy (rather a combination of factors was evident) However, it was still a major factor in respondent accounts and cannot be ignored.

The researcher has used Kincaid's (2002) exhaustive account of the physical aspects of vacant properties (the basis for the work of Remoy, 2010 and Wilkinson et al., 2014) to underpin this section. Participant accounts were cross referenced with Kincaid's findings and any discrepancies highlighted. Many of the physical factors identified by participants were very similar to Kincaid's (2002) work demonstrating that physical factors have not altered very much over time and do not differ significantly between countries (a similar finding is evident in chapter 5 when considering the physical characteristics of building agility). What is newly identified and potentially different, are the contingent processes that cause secondary office vacancy and that potentially constrain potential re-use (see the remainder of Section 4.4 and Chapter 5).

A central finding, and key difference with the classic studies of commercial office vacancy identified above, is that the physical characteristics of property were not the prime reason for vacancy. Rather, they are part of a complex process of vacancy that manifests in various locations for a variety of different reasons. Many of the physical findings had to be teased out of respondents (repeating the findings in the previous section); several research participants merely stated that,

'These buildings are not prime.'

Nevertheless, after some negotiation it was possible to uncover some key physical attributes that were related to the incidence of secondary vacancy which Table 4.4.2a describes.

Table 4.7 **Material Vacancy**

Physical issues	
Characteristics	Description
<i>Practical Considerations</i>	
Age of building	Particularly 1960/1970's and historical buildings constructed around the turn of the 20th century
Planning zone/building use	Buildings are vacant because they are not allowed to be converted into another use (prevalent in certain CBD areas which have exemption from permitted development right legislation)
Aesthetics	Buildings are considered ugly and have no curb appeal. This is an issue both internally and externally and particularly evident in relation to 1960's and 1970's properties
<i>Structural considerations</i>	
Envelope/facade/construction	Unable to meet contemporary thermal efficiency standards
Roof type/basement situation	Roof and basement design and construction is often beset by outmoded plant machinery which makes it difficult to add value through additional parking or extension
<i>Spatial considerations</i>	
Internal space configuration	The spatial grid is congested which leads to difficulty in subdivision
Floor to ceiling heights	Restricts the provision of modern M & E provision and control

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Entrance and floor accessibility	Inappropriate street and internal movement
<i>Mechanical and electrical engineering</i>	
HVAC (i.e. heating ventilation and air conditioning) is inadequate	Typically, older buildings but can even be an issue in buildings less than ten years' old
Electrical engineering	Inadequate network and lighting infrastructure
<i>Location</i>	
Relationship/interface with street	The building does not fit into its urban milieu
Parking	There is not enough parking on site or in the surrounding area
Accessibility	It is difficult to access the building by foot, car and public transport
Amenities	Retail, leisure, education and child care opportunities are in short supply
Public space	The surrounding area is not attractive
<i>Environmental issues</i>	
Presence of asbestos and other related materials	The cost of removing asbestos and related materials is prohibitive
<i>Legal</i>	
None conformity of Disability Discrimination Act and Building regulations	Buildings are no longer compliant with the building code

NB: This table follows the structure of work originally carried out by Kincaid (2002)

Exposing the Nature, Scale and Location of Secondary Office Vacancy

The **practical considerations** of physical vacancy were mostly age, aesthetics and planning related. Respondents felt that buildings were,

"Just too old, grotty and behind the times"

(Planning Director).

Corroborating the findings of Remoy (2010) and Wilkinson et al (2014) was the issue of aesthetics. Regardless of economic viability and physical feasibility, respondents indicated that,

"A lot of these buildings are just plain ugly inside and out"

(Director of major building contractor).

"It is important to consider the psychology of the old and new. Why would you purchase a reconditioned car at the same value as a brand new car?... The same argument is relevant to the office building"

(Quantity Surveyor).

The **structural considerations** were mostly related to envelope/facade and construction type. The building envelope often did not meet contemporary thermal efficiency standards or expectations, while its construction type often made retrospective alteration difficult to achieve. This was especially the case in 1960's buildings which often used reinforced concrete and steel wires for structural integrity (repeating a finding of Remoy, 2010, in the Netherlands). Depicting this situation, a Head of Office Agency quipped that,

"These buildings were constructed to last forever and stand the test of time - unfortunately tastes changed."

This links into the arguments in Chapter 5 which state that the building facade is often the most expensive intervention cost, indicating that building envelope is a central factor in vacancy and potential re-use. Interestingly, the recent permitted development rule

changes for office to residential (PDR) conversion (discussed in greater detail in Chapter 7) do not cover external alterations to the building, only internal alteration, further fuelling the debate in relation to the real impact of PDR changes. This omission precludes any alterations without a formal planning procedure (Chapter 6 argues that regulators should consider including building exteriors in permitted development right legislation).

In addition, roof type and basement configuration (in particular the presence of plant machinery and equipment) and the potential impediment of extensions was a key issues for research participants (reflecting the previous point, any alterations in this regard, in particular the addition of floors to a building are also excluded from the recent PDR changes). Research participants indicated that the ability to place car parking in basement spaces and opportunities to increase the overall critical mass of buildings (and indeed the overall aesthetic) were important opportunities for increasing the overall appeal of secondary office accommodation. When these opportunities could not be exploited the overall viability of an office building was severely limited

Research participants held **spatial configuration** in particular ire, with the overall grid density having a significant influence on the ability to change a building for different office customer expectations. They indicate that the column grid basically determines the flexibility of the internal space. Indeed,

"For interior strategies, columns are an interference that create unusable space"

(Head of Office Agency).

Restrictive floor to ceiling heights (and the inability to install raised floors and suspended ceilings) was also an issue for research participants, inferior dimensions typically leading to difficulty in arranging the latest HVAC and network and lighting infrastructure. In addition, the entrance and internal accessibility arrangements were also an issue for participants. In particular, the relative ability to navigate the building via elevators, stair wells and fire escapes. Several participants indicated that for buildings above a certain height it is no longer acceptable to have a single elevator system that is small, slow and laborious.

Mechanical and electrical engineering issues were the most oft quoted problem with secondary office buildings. This is linked to inferior floor to ceiling heights

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(illustrated in the previous section) that reinforce the inability to provide appropriate lighting, acoustics and thermal control. In addition, inadequate heating, ventilation and air conditioning (HVAC) infrastructure, is also an important factor in secondary office vacancy. This is because occupiers expect discreet zoning, with enough thermostats (coupled with diffuser density) to cater for thermal comfort and air quality (in contrast to rigid systems that preclude work space comfort).

Linked into workspace comfort and a distinct issue by itself is inadequate network infrastructure. In secondary office buildings electrical power capacity is often inadequate, unable to service the contemporary HVAC, elevator, lighting and computer demands of the office occupier. Modern telecommunications often require major vertical and horizontal pathways for cabling which necessitate appropriate structural spaces in terms of volume of kit and accessibility for maintenance and change. Some secondary buildings also have inadequate quantities/densities of data, power and voice outlets, undermining uninterruptible power supplies (UPS). In addition, data cabling standards often do not support high speed data transfer or appropriate telecommunications. Similarly, the correlation between type and density of light fixtures and actual function should be contiguous. Illustrating this point, in many historical properties built for sole/major tenants, this is not the case, with whole floor based systems a common feature (an ideal situation would involve motion sensitive discreet zoning with control provision).

Research participants indicated that the major physical **location** issue was the interface with space, where buildings have been conceived with little recognition of their juxtaposition with the street.

"Those areas that were considered prime locations a couple of decades ago simply are not anymore, occupier demand moved, buildings are no longer in the right location"

(Investment Agent).

"Buildings that look ugly with inferior public realm treatments will inevitably be looked upon with disdain"

(Urban Designer).

There was divergence in relation to parking, which some participants deemed inferior. Others contested this situation,

"A lot of these buildings, especially the 1960's and 1970's buildings have a lot of parking which is unusual for the city centre locations. This is supported by access to the highway network"

(Property Manager).

This corroborated the findings of Kincaid (2002) who indicated that the surfeit of parking is a positive characteristic of secondary office buildings. In addition, these buildings often lack social and leisure amenities, such as shopping and child care facilities and do not have attractive public spaces and parks. Participants also indicate that this is an issue when considering change of use in commercial areas, where the amenity requirement will increase exponentially. Secondary office buildings also tend to suffer from **environmental** issues with asbestos and fine dust (and the cost of removal) a major determinant in non-viability alongside **legal** issues such as noncompliance with building regulations and the Disability and Discrimination Act. Such buildings are quite literally legally obsolete.

4.4.3 Culpable Obsolescence

Research participants indicate that a key factor in secondary vacancy is the lack of ongoing maintenance and building upgrades which renders commercial office buildings obsolescent ahead of time (a kind of culpable obsolescence). Research participants illustrate a situation where building depreciation and obsolescence is commonly identified implicitly through price change and comparable valuation in those properties available for let. A Head of Office Agency observed that indicators included,

"Limited rental growth/rent reductions, falling rental values and capital values."

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Pro-active identification, for instance through building condition surveys and discounted cash flow valuation is more likely in buildings that are used for operational purposes, for instance through the various agencies of central and local government. The result of the implicit price change method is that continued depreciation in some vacant secondary stock is largely off the radar. This is because active transaction data do not exist due to long term inactivity (further emphasising the invisibility of secondary vacancy).

Research participants indicate that depreciation and obsolescence is still typically managed via the terms of full repairing and insuring (FRI) lease practice and dilapidation procedures (this has particularly been the case in the traditional longer lease agreements). The typical viewpoint was the following,

"Why would a landlord even check for depreciation and obsolescence under the terms of an FRI Lease? It only becomes an issue for the landlord at lease expiry...which sometimes takes decades."

(Partner, Investment and Development, Global Property Consultancy).

The same research participant goes on to argue that,

"Depreciation and obsolescence is only ever an issue upon lease expiry...otherwise it is not an issue or concern for either investor or landlord."

Feeding into the behavioural biases outlined in Chapter 2, in some respects this relieves the landlord of liability and places the burden on the tenant (part of the triple net situation identified in Section 4.2.4). However, a strong contention from research participants is that this process only accounts for physical obsolescence and does not account for functional and economic obsolescence. In other words, a traditional FRI lease is more than adequate in regard to general physical maintenance, however, it cannot react to or account for changes in the nature of occupier demand. Indeed, when questioned with regard to methods of monitoring and managing depreciation and obsolescence, the overwhelming finding was that,

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"Investors and landlords do not actively monitor either issue...it is important to consider headache value...one of the most attractive facets of investment property is the FRI lease...why on earth would investors want the inconvenience and cost of managing buildings...this is why all liability must remain on the tenant"

(Fund Manager).

An Investment Agent in the North of England indicated that,

"In theory explicit measurement would help...however, in practice you would then be needing specialist advice across all general practice disciplines to ensure that cash flows are well researched and realistic in order to ensure the proactive methods work well. This will be expensive and time consuming and therefore not likely to happen on a day to day basis."

The same research participant went on to argue that,

"All of the new guidance on sustainability and asset management is all very nice...but in reality the market will remain in type and continue what it has always done...who is going to stop it?...and why would it consider stopping when it is making more than enough money thank you very much?"

A leading Office Agent was categorical in his judgement, assessment and management of this issue is,

"Superficial, it is identified when cost levels go up - so it is always reactive."

According to a Property Manager working in local government, neither in certain cases should it be identified,

"Local authorities should not highlight depreciation and obsolescence as it could highlight or result in breach of covenant between landlord and lender."

Corroborating the findings of Agre (2005) in Norway (see Chapter 2), research findings varied dependent on the nature of ownership, investment model and over time.

"Explicit measurement is rare, I doubt that most landlords and investors do identify the issue in any meaningful way. They own the properties for so little time, and then a comparable price signal will justify a sale....the property in this case is never actually appraised in the physical sense"

(Managing Director of a UK Commercial Property and Real Estate Consultancy).

"Depreciation and associated obsolescence is typically not priced. This is particularly the case in medium to long term yield investments, less so in the case of shorter term leases as income guarantee is about to end"

(Head of Office Agency).

"Management of this issue depends on the owners. Smaller landlords take steps to protect their income and investment (particular owner occupiers), bigger institutions are more distant and less pro-active"

(Finance Director).

Reflecting this situation, research participants indicate that public sector organisations are more likely to take an explicit interest in their building performance. A Property Manager at the Chartered Institute of Public Finance and Accountancy (CIPFA) indicated that the public sector, education sector and local authorities,

"Are more likely to use the depreciated replacement cost (DRC) method of valuation to ascertain market value as they have a greater stake in building performance and cost on a day to day basis (and in the medium to long term as they are less likely to opt for a quick sell)...this has been compounded by the advent of Display Energy Certificates (DEC) which is only a concern for public buildings."

However, the same research participant goes on to argue that,

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"At the same time as the performance and the cost of the Government estate has increased in prominence, specialist staff have been made redundant and budgets have been slashed. This means that public sector organisations find pro-active building improvement difficult...they are aware that their buildings are disintegrating but all they can accomplish is sticking plaster fixes and minimal building legality. Overall, budget is spent on statutory compliance rather than improvement."

This means that for two different reasons commercial office buildings continue to depreciate. First, the commercial sector generally ignores depreciation and obsolescence altogether and concentrates on price rather than cost (selling an asset once it falls below an investment threshold). Second, in the public operational sector, lack of expertise and budget results in uncontrollable depreciation. A Property Advisor indicates that in both situations, depreciation and obsolescence,

"Creeps up out of nowhere and bites you on the arse. Then a kneejerk reaction of new property acquisition and/or new build takes place without dealing with the substandard asset."

Illustrating implicit outcome based monitoring strategies, a Fund Manager for one of the main institutional portfolios remarked that,

"The main indicator of depreciation and obsolescence is when a building becomes vacant, only then will we take action or more likely immediately sell. Of course for the building by this time it is often too late."

This is tempered by the views of a Senior Consultant at an international business services consultancy, who maintains that,

"Effective asset managers should know when a building is coming to the end of its life cycle."

The same Research Participant observed that,

"Energy Performance Certificates (EPC) and minimum energy performance standards (MEPS) are making planned maintenance crucial, EPC and MEPS are a benchmark in obsolescence appraisal...however the system is not perfect. There is massive divergence in quality and assessment."

Illustrating this situation an Investment Manager at a leading bank indicated that,

"I already know of banks refusing to lend on F or G rated assets unless a minimum energy efficiency strategy (MEES) is in place. Funding and liquidity is at the heart of the property industry and property values. In summary, not complying with MEES is more likely to affect value than complying."

4.4.4 Government Policy

Research participants indicate that Government policy can play a significant role in vacant secondary office property. They indicate that Government policy has unintended consequence and spill over effects. This can be illustrated through reaction to the Governments relaxation of permitted development rights for office to residential conversion in 2013 (this policy receives more critical reflection in Chapter 6 when it forms part of a policy recommendation for an agile space and place strategy). The result of this relaxation, according to a Planning Manager in Central London is that,

"There is anecdotal evidence of deliberate neglect of buildings in order to ease the path to conversion to another use, particularly residential use...elsewhere this has been compounded by the use of artificially inflated rents in order to grease the wheels of conversion."

This is something that is corroborated by a recent Financial Times article (Allen, 2014) that reported the repeated forced eviction of businesses and charity organisations in secondary office accommodation. The same Planning Manager indicates that this is driven by,

"The vast disparity between office and residential land values in Croydon, especially in the secondary office accommodation market. This results in huge pressure for residential conversions. In fact, changes into residential use are likely to be viable in 99.9% of cases in London regardless of building condition, which is the most critical factor."

Indeed, A Head of Economic Development at a local authority in Wales indicated that tenants are intentionally forced to prove their business viability,

"If tenants object to being removed from buildings awaiting conversion to new use they must demonstrate their viability. If they exist on peppercorn rents they are not viable businesses and therefore cannot complain about being moved to another nearby office building."

However, presenting a commercial perspective in relation to planning and economic development, a Head of Office Agency commented that,

"As towns and cities deindustrialise, or demand simply moves, planners continue to protect the areas previous use activity."

This links back to the institutional lock-in identified in Chapter 2 and reinforces the functional locational lock-in identified by Grabher (1993). The implication of this is that planning departments which enact blanket protection on building use (either formally or informally) protect the best office properties from conversion but inhibit the worst ones from being considered for conversion into alternative use. The result is,

"A form of urban inertia where given properties are not able to move into the most viable alternative uses"

(Planning Manager).

Reflecting this situation, an Investment Agent observed that,

"While the CBD is more than relevant in Central London it is no longer a useful term for regional towns and cities where defined use is breaking down."

Yet, highlighting the underlying complexity in mediating this situation, an urban designer argues that,

"It is difficult to consider change in use in the city because there is so much confusion and ambiguity regarding what the city is for."

This echoes the observations in Chapter 2 which suggests that the traditional modernist pursuit of unitary coherence is being replaced by urban contingency. Yet these findings indicate that traditional urban regulation is not equipped to tackle this manifestation (this issue will be revisited in Chapter 6).

An additional factor in commercial office vacancy is the impact of new development which is often incentivised by government. Identified by Greenhalgh (2006) in relation to Enterprise Zone development in the UK, and Weber (2010) in relation to Tax Increment Financing in North America, new methods of urban finance such as the Business Rate Retention Strategy, Tax Increment Financing and New Development Deals, either entirely or partially necessitate the creation of net new additional business floor space to expand business rate income. The implication of this agenda is that offices could be built with little connection to demand causing an oversupply. The result is enhanced secondary vacancy as occupiers move, through market filtering and displacement, to better space available at similar rental levels. Reflecting this situation, a Planning Manager observed that,

"One of the main reasons for vacancy is the continual build of new property, not related to new demand, rather, the presence of incentive, increased specification and speculation."

Concurrently, Government policy and rationalisation in the face of recession, and the small government neo-liberal ideology of the UK Government since 2010, was identified

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by research participants as a common cause in secondary office vacancy. A Property Manager in local government indicates that,

"Most authorities are looking to upgrade and rationalise due to the environmental and austerity agendas."

While a Property Advisor indicates that,

"Reduction of the Government estate is a real priority directed by Francis Maude, rightly so, waste is endemic...but who wants to purchase the detritus?"

Consequently, a Property Manager indicates that this has led to,

"A flood of vacant office accommodation. Much of this property was not built with commercial location in mind...this was not a consideration of public sector development. As such many of these properties are now at an extreme disadvantage on the open market in terms of viable rental levels even though they are often in decent condition (compared to commercial lets)."

Reinforcing this argument, a Planning Manager contends that,

"Location was far less relevant to the public sector as they do not need to be in the best commercial locations to function. However, this issue is now very negative during property rationalisation and disposal strategies as these properties were never built with commercial tenants in mind."

4.4.5 The Structure of Local Rental Markets

There was a great deal of consensus with regard to financial obsolescence. The viewpoint espoused by respondents coalesced around the related issues of locational and economic viability, specifically the impossibility of generating rents high enough to finance building maintenance and refurbishment in certain locations. In parallel to the work of

Remoy (2010) and Wilkinson et al (2014) who highlight the physicality of location, there was less emphasis on the physical notion of location (covered in Section 4.4.2). Instead, more emphasis was placed on the link between location, the structures of local rental markets and commercial viability. Reflecting this situation, a Head of Office Agency remarked that,

"Quite simply, the achievable rent following improvement in existing use is too low to justify the cost of carrying out any refurbishment to substandard buildings...No one will lift a finger unless viability can be demonstrated. This is why secondary buildings are vacant."

Further, An Investment Manager remarked that,

"Many landlords are in a financial bind. A large proportion of outstanding debt is secured against secondary property. Yet, owners often have a lack of cashflow/funding to enable them to refurbish/redecorate space."

Research participants indicate that certain locations (in particular those locations outside of Central London and the regional core cities) do not have the underlying rental conditions to finance building reinvestment. This results in a paradox. Those locations that want to protect their office accommodation (such as Central London) possess the underlying economic conditions to justify improvement. Yet, they do not because they want to pursue change in use. While those locations with an abundance of underused and vacant secondary office properties do not have the underlying economic conditions to justify improvement (or agile re-use, see Chapter 5). Research participants indicate that inability to demonstrate commercial and economic viability is one of the key causes of secondary office vacancy and the main factor constraining potential re-use (see Chapter 5).

The consequence in certain locations is a situation where some secondary commercial office assets are stranded, unable to fund the cost of improvement. Chapter 5 and 6 revisits this issue arguing that certain buildings, in certain locations cannot be considered for refurbishment or change in use (or in some cases demolition) without

some kind of gap funding mechanism or subsidy. In response Chapter 6 presents a 'redevelopment fund' proposal that could help ameliorate problems of economic viability.

Illustrating this situation, the Head of Economic Development at a local authority in Wales indicates that,

"Rental values in this city simply do not justify building maintenance and improvement and certainly not conversion into alternative use...this leaves cities like Cardiff at extreme disadvantage...especially when BPRA does not exist in Wales and PDR changes have not been adopted."

According to the same research participant, the consequence of this situation is that,

"Cardiff does not have the underlying rental values to attract prime office space, neither can they justify the cost of refurbishing secondary to account for this shortfall. The result is that cities like Cardiff get left behind."

Furthermore, an Investment Agent commented that,

"Who would bear the cost of property improvement when the demand for secondary space is yet to be supported by occupational demand? There is no incentive to do this for landlords. In short landlords will prioritise avoidance schemes and hope that the lack of new development stimulates demand in secondary space."

4.4.6 Secondary Institutions and Education

Feeding into the notion of institutional lock-in, explicated in Chapter 2, a key point of consensus was around the institutional nature of commercial markets. Specifically, in terms of education and training, informational structures, financial lending and the means of potential office appraisal and valuation, which coalesce to create a situation of market inertia. We can understand this situation by focusing on the following five interrelated issues,

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1. Market signal based development decisions
2. The application of short-term development appraisal methods
3. The continued use of long term asset valuation methods based on the headline rent
4. Educational orthodoxy
5. The absence of information in relation to vacancy

First, this was related to the absence of market intelligence. Perversely, one of the main reasons there is so much secondary office vacancy is that it is difficult to prove its existence beyond anecdote and hearsay,

"We just do not know where these properties are"

(Property Manager).

Echoing Chapter 2, research participants indicate that, secondary office property is typically missing from commercial real estate modelling.

Reflecting this situation the Director of a regional city lobby group argued that,

"Core cities will have no prime office supply in at most five years, we must build more...I concede that is less of an issue in small towns and cities."

Section 4.3 supports this contention, however, there are also significant quantities of secondary office property in Glasgow, Newcastle, Leeds, Manchester, Liverpool and Nottingham (the core cities included in the research sample). This reflects the arguments in Chapter 2 which indicates reliance upon and preference for the prime office market. Furthermore, participants indicate,

"For regulators, such as a local authority, Employment Land and Premises Surveys can be quite broad brush and rely on visual survey which is then supplemented with some commercial office data to aid legitimacy. It is very

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difficult to get an accurate picture of depreciation and obsolescence...although, as a method of identifying strategic designations, this method is accepted"

(Planning Manager).

Moreover, a leading national Office Agent indicated,

"In the main, I think the sector appears quite intelligent in terms of our market assessment tools. We can talk about 'absorption rate', 'take up' and 'rental adjustment' with confidence, which then tell us when to build new supply. I must confess though, I do not know whether these figures are based on an assessment of supply...I have never been challenged, so I have not needed to ask."

This links into the availability heuristic argument set out in Section 2 and the reliance on available information and accepted working practices.

Second, research participants related this theme to inappropriate speculative development related to macro scale economic conditions. A leading developer indicates

"This is a result of the spreadsheet mentality of development, as soon as the green light switches on the interest rate change indicator cranes reappear in the sky. This works in London because there will always be demand but it does not work in the regions."

Illustrating this situation, research participants concurred that the office market is set up, and defined around, new development based on value for money and minimum cost (reflecting the arguments in Section 2.2.4 - 2.2.9). Typically,

"Designs are investor, developer and owner driven rather than occupier...buildings are designed and constructed based on cost and value, where an adequate for the time being attitude prevails. The best value materials and designs in terms of cost are used, rather than the best designs and materials per se"

(Property Manager).

Third, research participants concurred that,

"There is a short term perspective, development appraisal and valuation models rarely go beyond the first lease and do not consider what happens to the building next. Typically, an institutional investor develops a building, secures a relatively long lease and then sells on i.e. the traditional build, let, sell. Even if this is not an appropriate mode of development it is still the dominant method of development"

(Property Advisor).

Consequently, a Property Manager argues that,

"We need to review the application of development valuation...development appraisal and investment is typically profiled over circa 100 years. However, office buildings are often empty and regularly demolished before half of this time has elapsed (sometimes much sooner)...a starting point would be to review the basis and reality of these historical valuations."

However, the same research participant indicated that,

"There is a lot of vested interest in protecting the standard models of appraisal and valuation. The building is always blamed for obsolescence and vacancy, yet the valuation instrument is exonerated. The reality of the situation is that these buildings are constructed to make money during the first lease period. The rest as they say is history...do banks really want to know that their investments literally have no long term value?"

Chapter 6 revisits this issue and suggests the potential for a new valuation and building appraisal model based on Building Information Modelling (BIM).

Fourth, was the traditional use of valuation instruments, particularly the long term headline rent. Feeding into the disguising of secondary office vacancy argument outlined in Chapter 2, the CEO of a leading secondary office asset specialist argues that,

"Office valuation should be based on the real cost of the property which include holding costs, intervention costs and professional fees. The headline rent ignores this situation."

The same research participant indicates that the reason for this is the investment approach to property development and valuation which neglects cash flow rent in favour of long term asset value and inflation.

"Landlords emphasise the long term value of their assets at all costs, even ignoring potential short term cash flow opportunities. Using the 'investment method' focuses on the hypothetical long term value of a property in order to calculate a rate of return, rather than the real cost and value of the building. The reality is that investors are willing to endure poor income return in the short term in the hope of a long lease."

So, there is a contradiction. The previous section indicated that methods of development appraisal need to adopt a long term approach to valuation. This section argues that methods of building valuation need to adopt a short-term perspective based on cash flow. Research participants indicate that both positions are correct. The only way to maintain and protect a long term development appraisal valuation over the whole building life cycle is to explicitly manage building performance and cash flow in the short-term. The compound loss method of valuation outlined in Section 4.3 provides a means of valuing the cost of secondary office vacancy. Feeding into the institutional lock-in outlined in Chapter 2, the same research participants argues that the implications of this situation are,

"If a space is unoccupied, the value will be derived from the last lease, so if a long term tenant moves out of 20,000 sqft of space at the end of their 15-year lease, it is more valuable for the landlord to leave the space empty than fill it with a multitude of smaller businesses on shorter terms."

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This links directly to the findings of Remoy (2010) in the Netherlands who found that one of the main barriers to re-use was the discrepancy between the book value of the property (defended by the landlord) and the residual valuation used by developers when appraising development viability (in other words the hypothetical value of the property and the real value of the property). This finding is supported by a leading Investment Agent who argues that one of the major stumbling blocks with regard to re-use projects is the,

"Unrealistic valuation placed on secondary assets, especially in the CBD, which do not reflect the underlying land value or existing and potential rent."

Fifth, was the issue of education. Several research participants indicted that they were just doing what they had been taught and trained to do over a period of years. Starting in University and continuing through professional development, research participants argue that secondary office property, and managing its re-use, is not part of real estate education and training. Although there is cursory attention given to depreciation and obsolescence and the timing of physical redevelopment, this is little more than an afterthought.

*"We are just doing what we were taught to do and importantly now paid to do.
We are employed to make money, not save the world"*

(Fund Manager).

More encouragingly, there was consensus amongst research participants that education (and reformed guidance procedures) was fundamental to managing and ameliorating the incidence of secondary office vacancy.

"Prime areas are few and far between. Never mind properties, whole locations now have marginal viability. What do to about this is the key question. We need evidence, case studies and guidance which we can then use to train the next generation of real estate professionals"

(Property Manager).

However, an Investment Director indicated conventional inertia,

"In many ways education and guidance is slowly but surely being improved, this is especially the case in relation to the pricing and assessment of sustainability...the problem is that industry professionals are just not using it."

The topic of education is revisited in Chapter 6 when a policy recommendation is made in favour of the assertions in this section, while the development of a potential guidance note for the agile re-use of secondary office properties is suggested as a fruitful opportunity for further research in Chapter 7.

4.4.7 Planned Obsolescence and Enhanced Specification

Furthermore, research participants drew attention to the coercive nature of the commercial office property market and a consequent occupier backlash which has led to increased secondary office vacancy. A leading developer argued that,

"For years the market has told us what and where to occupy, what specification we should aspire to and how bright our office should be...and then moved us to another office when they tell us that our old office is crap...it is a stitch up...no one listens anymore, occupiers have woken up, looked out of the window and wondered...why on earth are we in this building?"

One way of understanding this concept is to reflect upon the principle of 'planned obsolescence.' Planned obsolescence is when a tradable product is intentionally designed to have a finite life span. The product is typically constructed to last long enough to induce customer need and to prove that it is a quality product even though it needs replacing. The theory is that when a product fails the customer will want to buy a brand new version (Grout and Park, 2005). Crucially, the customer must have enough confidence in the manufacturer/market to continue to buy the new product. A traditional example is the mobile phone, where USB/connections/jack plugs often change in specification rendering the product obsolete relatively quickly. The outcome is that the mobile phone owner will need a new phone as the existing product is obsolete, despite

the fact that there is nothing inherently wrong with the existing model. Producers following the philosophy of planned/built in obsolescence, ask themselves,

'How can we design a product that breaks down quickly but still leaves customer confidence intact?'

Although obviously different in scale, a comparison can be drawn between the mobile phone and the commercial office market. Intentionally or otherwise, office developers and the institutions of the office market can be seen to be following a similar path. Office buildings are constructed to the highest specification criteria of the day, but become obsolete relatively quickly as guidelines for specification increase. At the same time these same guidelines help retain confidence in the office market. For instance, one office agent described the British Council for Offices (BCO) guide to office quality as,

"De facto charter mark of office quality."

Additional examples of this situation include minimum energy performance standards (MEPS) and the general building code which is enforced by statutory building regulations. Planned obsolescence typically works best when the producer or group of producers has an oligopoly (market dominated by small number of sellers and support services) because it relies upon a degree of certainty that customers will continue to purchase the product. Indeed, a leading developer noted that this was prevalent in the commercial office market,

"The office market is dominated by a select group of office agencies, developers, and financiers who more or less define the market – the result is a standardised model of development...all of the office buildings look the same, save for a few typological differences."

The logic behind this approach (and motive) is to bring about medium to long term sales volume by diminishing the time between the next purchases (often referred to as shortening the replacement cycle). This shortening can be seen in diametric opposition to

the long term principles of agile re-use which are forwarded in Chapters 5 and 6. Research respondents suggest that in the commercial office sector, through formal methods of quality (BCO, MEPS, SKA and BREEAM) ensure that the replacement cycle will continue with each new iteration of guidance. This perspective is then informally policed and reinforced by office agents, investors and developers who have a direct interest in continual new development. For instance, an Executive Director for Global Real Estate at a leading real estate fund illustrated the severity of this situation,

"Increasingly, CEO's, chairman and shareholders are increasingly being held personally liable for environmental performance."

Furthermore, an Investment Manager for a leading bank remarked that,

"It is no longer 'acceptable' to operate from an inefficient building as organisations sustainability and supply chain obligations increase."

Corporate sustainability objectives can be due to climate change obligations and in certain cases minimum energy performance standards enforced by energy performance certificates (EPC's) and Display Energy Certificates (DEC's). Following the EU Energy Performance in Building Directive (first published in 2001) commercial buildings must display an EPC upon conveyance (subject to exemptions for certain types of property such as listed buildings and those below 500m²) while all public buildings must exhibit a DEC. Indeed, from 2018 onwards it will be illegal to let certain office properties below a Grade E EPC. Reflecting upon this situation an Urban Designer argued that,

"There is an agenda/doctrine of efficiency. People who work in these sealed buildings often hate the new conditions – for instance the inability to open a window...these properties are literally overrated through conformity."

However, Chapters 6 and 7 indicate that following a strategy of planned obsolescence can be risky (ultimately consumers may decide to purchase from competitors) and that

this trend may be drawing to a close with a potential opportunity for disruptive innovation. A CEO of a leading serviced office provider illustrates this situation,

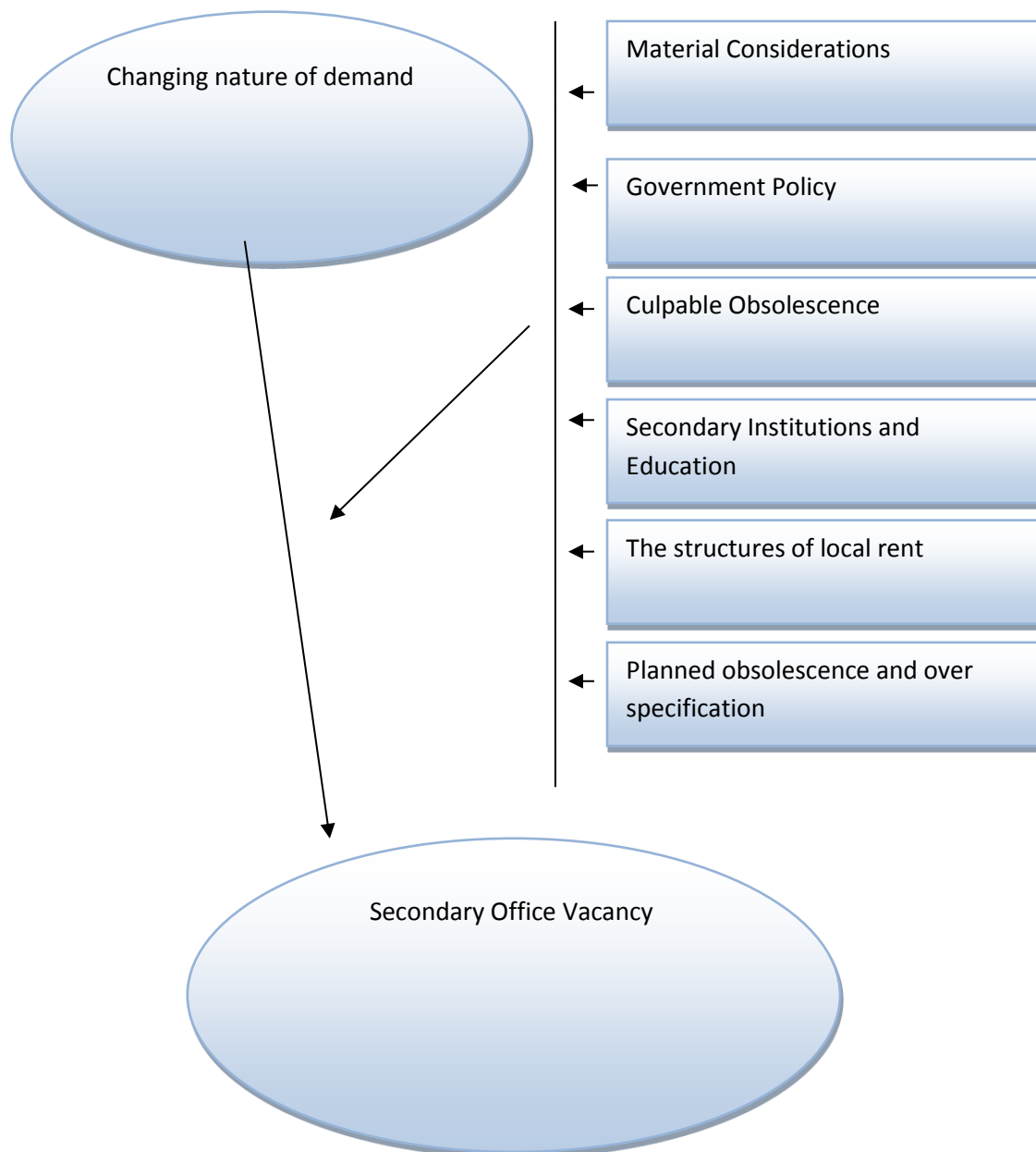
"Occupiers do not want long leases. They want reduced cost, rather than increased specification. Tenants want flexibility and choice."

Planned obsolescence causes commercial office vacancy because it leads to a type of urban product cannibalisation. This happens when new property undermines the rate of return associated with older office buildings. Existing tenants move out of secondary buildings (the same thing happens when new iPhones undermine older versions) and filter into new buildings in a flight to quality at comparable rent, flooding the market with older supply. This can be considered part of the 'creative destruction' at the heart of the economic process. However, as Chapters 5, 6 and 7 attest, the quandary and challenge for the future is to design products/office buildings with structures and components that can be recycled or re-used when the product is discarded.

4.4.8 Understanding Secondary Office Vacancy

This section has revealed 6 underlying causes of secondary office vacancy, with each aspect containing an additional layer of causation and complexity. This sits underneath the overall generative mechanism, the structural change in the nature of occupier demand in the face of enduring restrictions in the nature of supply. Figure 4.8 below describes this situation,

Figure 4.8 **Causal Model of Secondary Office Vacancy**



In this section the researcher has attempted to identify the causes of secondary office vacancy. Yet it is more accurate to say that all of these causes are part of a dynamic process that coalesces in certain locations, at certain times and depending on circumstances, may not take place at all. In order to reflect this situation, the next section sets out a typological breakdown of commercial office vacancy in order to better reflect the positive and negative attributes of commercial office vacancy.

4.5 A Typology of Office Vacancy

The theoretical argument and findings in this thesis suggest that commercial office vacancy can be separated into two distinct tiers, that of natural vacancy and that of structural vacancy, both of which can be understood geographically and conceptually. This then interacts with the commercial office market, which in itself, is separated into the prime market and the secondary market. However, these bifurcations do not run contiguously. Findings in Section 4.3 indicate that there is a great deal more secondary office property than prime office property (although the balance varies with location). The proceeding section helps us reflect upon this situation and its internal dynamics.

Each office vacancy tier, natural and structural, has its own characteristics, and although both part of the same commercial office market, operate and manifest themselves quite differently. The proceeding section lays out a typology for understanding this situation (Figure 4.9 over leaf) and should be read from left to right and top to bottom. The horizontal dimension describes the variation inherent in office vacancy, running from the macro to the micro level. This is denoted by the horizontal arrows which pass through Column 3. The vertical dimension represents the property ladder and the building life cycle, the best properties are added to the top in a funnel like system and the worst ones eventually drop out of the bottom depending on their contingent circumstance (following the vertical arrows in Column 3). This section also forms the bridge between this chapter and the next, as this model will be taken forward into Chapter 5 to help structure and make sense of the potential management options for secondary office vacancy.

Figure 4.9 Typological Model of Vacancy

Segmentation		The Market (towns, cities and regions)	Vacancy Processes
Natural Vacancy	Premium Vacancy	<div> <div>↓</div> <div>← Prime →</div> <div>← →</div> </div>	<ul style="list-style-type: none"> • Cyclical • Frictional • Initial
	Auxiliary Vacancy	<div> <div>↓</div> <div>← →</div> <div>← →</div> </div>	<ul style="list-style-type: none"> • Churn • Hidden • Strategic
Structural Vacancy	Evolutionary Vacancy	<div> <div>↓</div> <div>← Secondary →</div> <div>← →</div> </div>	<ul style="list-style-type: none"> • Inefficient • Inertial • Transformational
	Final Vacancy	<div> <div>← →</div> <div>← →</div> <div>↓</div> </div>	<ul style="list-style-type: none"> • Physical • Planning • Economic

The first column describes the respective tiers of vacancy, natural vacancy and structural vacancy. Natural vacancy describes those properties that efficiently clear through the classic supply and demand mechanism, while structural vacancy describes those properties that no longer clear through the supply and demand mechanism (column 1 describes the macro level description of the vacancy process). This bifurcation can then be sub-divided in order to reflect market segmentation. The natural rate can be sub-divided into premium and auxiliary vacancy. Premium vacancy, as the name suggests represents the very best office buildings that are on the market and is associated with the familiar initial, frictional and cyclical vacancy (Kerris and Koppells, 2006; Lausberg, 2008). Auxiliary vacancy describes those vacant secondary office properties that still have a role to play in the commercial real estate market. Auxiliary vacancy describes non-prime secondary office properties that are held in reserve in order to 'fill in' prime office supply shortages. The concept of 'filling in' is, by its very nature, temporary, presuming that once new prime buildings are constructed tenants will move to higher specification accommodation. Filling in is most likely to take place in buoyant office areas with tight office supply conditions and during and following times of recession when speculative construction has abated resulting in lagged development.

Exposing the Nature, Scale and Location of Secondary Office Vacancy

Auxiliary vacancy is more permanent in those areas with adverse economic conditions, where it is difficult to justify the cost of development. In these locations it is important to safeguard viable secondary office space in order to fulfil the requirements of occupier demand and economic development (in such areas auxiliary vacancy is closer to premium vacancy). A Property Advisor indicates that a paradox is evident in these locations where the market fundamentals do not support office development (even though there is potential demand). This leads to,

"A process of attrition where the best value option is to convert into alternative use. However, there is still a need for secondary office property in reserve and this is not being developed because the rental levels are not high enough to justify its development."

A Head of Office Agency indicates the implications of this situation,

"Currently some of these new uses are completely inappropriate for city centre living, there are not any schools or nurseries, so family living is a no go."

In turn, structural vacancy can then be sub divided into evolutionary vacancy and final vacancy. Evolutionary vacancy describes those office properties that could still have a future in alternative use if adapted. Final vacancy, as the name suggests describes those office properties that no longer have a future either in their present or alternative use and should therefore be removed from property supply altogether. The first two columns can then be related to the overall commercial office market (column 3), which, for simplicity, is divided into prime property and secondary property. Reflecting the findings in Section 4.3, the prime market only intersects with premium vacancy, while, secondary vacancy accounts for auxiliary, evolutionary and final vacancy, and is therefore more complex and dynamic than the general position criticised in Section 4.2.

It is this part of the model that lays out the disparity and non-alignment between natural and structural vacancy, and the prime and secondary market (they are not one and the same). Demonstrating the influence of the secondary market, this model indicates that it is in part included in both tiers of vacancy, natural and structural, as it also forms part

of the auxiliary layer of vacancy. It is this non alignment that exposes the myth that all secondary office vacancy is bad and that the natural rate of vacancy only contains prime office property. The third column, representing the property market (and its contingent location), forms the spinal structure of the model. The left hand side of which considers the segmentation of vacancy in office market locations, while the final column to the right, considers the processes of vacancy that take place in these locations. It is these processes that reflect and make sense of the dynamic change and movement that takes place within and between the respective segments of commercial office vacancy.

This is because the final column describes the micro level vacancy interaction. 'Cyclical', 'frictional' and 'initial' vacancy are relatively well known in the international literature (Kerris and Koppells, 2006; Lausberg, 2008; Remoy, 2010). These concepts are typically associated with the 'natural' rate of vacancy, market clearing and concepts of equilibrium and premium vacancy. By themselves they are an efficient means of describing premium vacancy as its level oscillates around equilibrium (cyclical), as it facilitates the movement of firms (frictional) and as new office property enters the market (initial). All three types of vacancy are helpful as they facilitate the efficient operation of the office market and are therefore presumed to be temporary in nature. Yet, as the theoretical argument in Chapter 2, and the findings in Sections 4.3 and 4.4 reveal, premium vacancy is in very short supply while the natural rate of vacancy only accounts for between 4-10% of office supply at any time. It is to all intents and purposes the top slice of the market.

Moving down column 4, churn, hidden and strategic vacancy describe those types of commercial office vacancy that taken place within auxiliary vacancy. Churn vacancy is a variation of frictional vacancy, describing this concept after it has begun to filter down the property ladder. Churn vacancy takes place when the push and pull factors of new development at higher specification are constructed and cause existing tenants to leave in a 'flight to quality.' It is different to frictional vacancy because it leads to a downward revision in rent, capital value and yield (without significant improvement) and takes place more regularly. In itself it is not a negative attribute of vacancy, (this type of filtering and absorption is directly related to emerging and small businesses), however, it is a signal that such property is no longer a prime investment.

Hidden vacancy describes that portion of vacancy that is difficult to detect, often consciously so. It includes those properties that are taking shelter from empty property

rates and which are vacant to all intents and purposes and those properties considered grey space (those properties that are leased but are surplus to tenant requirements). Strategic vacancy is a potentially negative attribute of the commercial office market. It describes those instances when landlords forcibly evict or coerce tenants to leave their buildings in pursuit of higher values associated with alternative building use even though these offices are still relatively viable in their present use (hence why it sits in the auxiliary segment). Strategic vacancy is particularly prevalent following the advent of relaxed PDR rights which has incentivised landlords in certain locations to target more profitable use (see Section 4.4). All three of these concepts are still part of natural vacancy but are also associated with degrading performance and increase in void space.

Inefficient vacancy, transformational vacancy and inertial vacancy take place in the evolutionary vacancy layer. These types of vacancy can be considered on a progressive redevelopment spectrum and chart the transition from office accommodation into potential new use. Inefficient vacancy describes those properties that are inefficient in terms of operational cost, holding cost and embodied carbon. These properties are functionally and economically obsolete and are ready to transition into alternative use (or potentially within use following major improvement). Inertial vacancy describes the regular impasse between operational use and transformation. It does not happen in all cases but can be a consequence of restrictive tenancy covenants, planning negotiations and financial planning. As the names suggests, transformational vacancy describes those office properties going through new development, and details the final transition between inefficiency and office properties leaving supply altogether (and entering another property market with additional attributes). During this process these properties will be non-income making and will likely be removed from the statutory rating list. However, in the short-term at least, they are part of the structural vacancy equation.

Physical, planning and economic (often interrelated rather than separate categories) vacancy makes up final vacancy. Planning vacancy includes those properties that cannot be adapted into alternative use (but are no longer viable in their present use) because they are constrained by planning (for instance those locations that have gained exemption from PDR changes in Central Manchester). This type of vacancy is most prevalent in CBD areas, particularly in London and the regional centres where the 'best' office property is in short supply (however it is less common following the relaxation of permitted development rights for office to housing conversion). Physical vacancy

describes those properties that have either depreciated beyond repair or have restrictive designs which do not lend themselves to agile re-use. Economic vacancy describes those properties that are not supported by viable rental levels. In other words, the underlying rental levels that underpin such buildings does not cover existing running cost or the cost of development. The only way these buildings can be re-used is through the introduction of subsidy.

The segmentation is not a static model. There is a great deal of transference between the four segments, especially between auxiliary and evolutionary vacancy (and increasingly between markets as the boundaries between use dissolve). For instance, inertial vacancy can exist throughout the vacancy spectrum, however, it is most prevalent in evolutionary vacancy as it is often overlain with several other factors that negate the building's ability to function as an office or move into new use (see Section 4.4 and Chapter 5, 6 and 7). The model will also vary between locations depending on the specific characteristics in those locations.

4.6 Chapter Summary

In response to the first research question, this chapter has exposed the nature, scale and location of secondary office vacancy in the UK. First of all, it has fleshed out what secondary property is, in order to inform the proceeding enquiry. It has then presented a stock appraisal of secondary office vacancy in the UK describing its empirical characteristics. The proceeding section delved below these finding to expose the causal nature of this phenomenon. Finally, it brought together the findings from the previous three sections to form a typological model for commercial office vacancy which can be used to inform Chapter 5. The next chapter considers how the incidence of secondary office vacancy may be managed and the opportunities and consequences that influence this situation.

Chapter 5 Managing the Incidence of Secondary Office Vacancy

5.1 Chapter Introduction

The previous chapter fleshed out the meaning of secondary office property before conducting a stock appraisal of secondary office vacancy in the UK. It then laid out the causes of secondary office vacancy before developing a typological model of commercial office vacancy. This chapter responds to the second line of enquiry, how to manage the incidence of secondary office vacancy. Out of all of the chapters, this is the one with practical intent, rather than theoretical reflection. It can be used as framework primarily by landlords, but also interested parties, to evaluate the various options for secondary office building re-use. First of all, this chapter reconsiders adaptive re-use. Building upon the observations of research participants and the work of Remoy (2010) and Wilkinson et al (2014) it widens its focus and associates it with the concept of the building lifecycle and agility. This is in order to move adaptive re-use beyond its singular focus on physical change in use toward a holistic perspective that includes less tangible strategies.

The proceeding sections and chapters of the thesis focus on building agility, rather than adaptive re-use. The chapter takes forward the typology of office vacancy presented at the end of Chapter 4 and supplements this with an additional layer which explores the various management strategies available for secondary office vacancy. Rather than presenting these opportunities as static choices, they are presented on a continuum within the layered appraisal of vacancy already set out at the end of Chapter 4.

The next section considers the economics of building agility and the importance of the end user within this situation. This is then followed by a consideration of the physical characteristics of building agility in relation to the respective office building eras identified in Chapter 2. The chapter ends with a PESTLE analysis of the contingent factors that influence the management of secondary office vacancy and an outline typology of agile re-use scenarios.

Corroborating the theoretical argument in Chapter 2 and the findings in Chapter 4, in 2012, Ashley Hancox, Head of UK Regional Office Agency at CBRE stated,

“Occupiers have increasingly been demanding better quality, well-connected, sustainable offices, of a specification that is really only offered by the newer,

prime office buildings. Occupiers are also able to afford these better specified offices more so now than ever before. As a result, older, second hand offices are becoming functionally obsolete and increasingly economically redundant.”

(Ashley Hancox quoted in CBRE 2012:2).

In conclusion he argued,

“Landlords and developers have two options; to either reposition their assets from secondary towards prime or to change the use of their accommodation. Put simply, obsolete office properties in our regional city centres must evolve or die”

(Ashley Hancox quoted in CBRE 2012:2).

The proceeding chapter directly engages with the argument of Hancox (2012). However, what this chapter does not do, is layout a decision making model for agile re-use, in the manner of Kincaid (2002), Remoy (2010), Gereadts and Van dor Voordt (2003, 2007) and Langston et al (2008) in relation to change in use. The models set out by these authors focus on the physical aspects of transformation, mainly concerning conversion into housing. In contrast, the intention of this chapter is to retain a wider focus which prohibits the identification of a decision making model as the variables would be too numerous. However, Chapters 6 and 7 indicate that a holistic decision making model is needed to underpin building agility and is therefore an area with considerable potential for further research.

5.2 Re-stating Adaptive Re-use: An Agile Perspective

First of all, this chapter offers an alternative reading of adaptive re-use. Primarily, research into the re-use of second hand office buildings has been located in the adaptive re-use literature (most notably Remoy, 2010; Wilkinson et al., 2014) and this is reflected in the critical appraisal of literature in Chapter 2. However, from this chapter onward the re-use of second hand office buildings will be centred on the concept of building agility rather than adaptive re-use. This follows initial criticism of adaptive re-use in Chapter 2

as atheoretical and material but more prominently following criticism by research participants.

This avenue was not the initial intention of the researcher. The original questioning strategy (see Appendix 4) in the Delphi analysis set out to gain a rich understanding in relation to how market actors were interacting with the concept and process of adaptive re-use. The plan was to then locate the consequent findings in international literature and reveal comparative differences and new knowledge. Instead, an Investment Agent warned during a pilot interview,

"You are not going to get anything from the working market in relation to adaptive re-use, we do not use the term. All you will do is turn participants off."

And so it proved, research participants simply did not register the term adaptive re-use,

"Adaptive re-use is a meaningless term, is it an academic term, it certainly is not something that I have ever heard of and do not think it will be catching on?"

(Head of office Agency).

Instead, research participants considered it a meaningless term and preferred change in use, conversion and transformation and most of all the concept of agility.

"You would be better off talking about agility, businesses need to change every day. Does property let them do this. I do not think so, anything but"

(Fund Manager).

Only the design professionals made use of adaptive re-use, equating it with ideals of long life and loose fit set out in the 1960's and the,

"High ideals of contemporary sustainability"

(Leading Architect).

Reflecting the theoretical argument in Chapter 2 and the finding in Chapter 4, research participants indicated the need to focus on disjuncture's and frictions, particularly between the increased rate of organisational change and the inability of the property industry to keep up.

"It is not about adaptive re-use; it is about the ability of business to change the way they work without resistance. Business agility is like gold dust but this is useless if you are trapped in your business space. Instead of focusing on the physical building you need to approach the situation through the eyes of business"

(Property Advisor).

In order to reflect the views of research participants this required a reformulation of the adaptive re-use concept. The recast perspective in this thesis, centred on the concept of building agility, recognises the physical nature of adaptation, but only as one facet of a complex agenda. Relating to the findings in Chapter 4, that office obsolescence and redundancy is the consequence of a multi-layered causal structure, any re-use strategy must also account for this multi-faceted complexity. Therefore, the following definition of building agility is used to inform the remainder of this thesis,

'Building agility involves any intervention process in a building, which may include economic, social and physical changes, to maximise and extend the continued use of a building and the concurrent ability to resist, withstand, recover from and exploit change. Buildings that exhibit agility have the capacity to endure for long periods of time and progress through adaptation to meet the relative needs of occupier demand'

(Authors own).

The revised definition indicates that adaptation is not exclusively physical, rather, it is an holistic process which reflects the evolutionary life of buildings and the institutional environment within which they exist. It covers financial incentives, repackaging,

refurbishment, physical reuse and demolition as well as the tools that inform this process, such as methods of development appraisal, building valuation, guidance and regulation. However, above all else, research participants indicate that it is a mind-set, one based on vision, nimbleness and the ability to change direction efficiently and effectively. One way of understanding this situation is to equate adaptive re-use with a product or action. In other words, as the name suggests, an office building will adapt, however, this conceptualisation does not evoke the process through which this happens, only that it happens. In contrast, building agility describes the output, adaptation, and the inherent ability of the building to change and the processes through which an adaptation takes place.

The focus on agility can then be extended to the wider location (urban agility) and the institutional environment (institutional agility) within which the office market is set, in order to reflect upon the various lock-ins described in Chapter 2. A simple analogy is to use the human body. Agility describes the ability of the human body to change direction in an efficient and effective manner. This analogy can be extended to commercial real estate development. In this sense building agility describes the ability of office buildings and their institutional environment to change direction in response to changing user characteristics in an efficient and effective manner. Building agility (and the wider concept of urban agility) argues that investors, landlords, designers, regulators and the institutions of the office market, need to be increasingly nimble in their respective office building strategies. They need to show dexterity in the face of dynamic change and alacrity in the face of enduring market inertia. Chapter 6 describes the policy requirements for building agility, while Chapter 7 indicates the hope that urban agility can be used as a useful heuristic to guide the critical appraisal of urban inertia. The aim of this is to provoke the recasting of commercial real estate institutions around notions of flexible and continual building re-use

Concepts of agility are starting to take root in the ICT, organisational change and project management disciplines. All three disciplines are traditionally unrelated to commercial real estate development (although project management has recently been adopted by the RICS as a professional pathway). However, all three can be used as a proxy for the way that the business community is changing and can help inform how commercial real estate needs to change accordingly. Building agility borrows terminology from software, organisational development and project management

methodologies, arguing that property development has much to learn from these disciplines. All three spheres of business have embraced change as an integral part of the development process. Indeed, the context of software system development is reaching un-paralleled levels of dynamism (Silver and de Lemos, 2011). Software systems and organisations are now being designed to continue to operate in tandem with changes in user requirements, legal regulations, market opportunities, usage settings, locality and network connectivity (Metzger and Di Nitto, 2013).

In addition, the expectations of end users with regard to personalisation and customisation are increasingly critical to market success (Adomavicius & Tuzhilin, 2005). Obvious parallels can be drawn with the fluid nature of occupier demand and the restrictive nature of office supply detailed in Chapter 2 and 4. Not only can software and organisational development be used as a critical metaphor for commercial office supply and urban development, it also reflects the flexible ways in which business now expects to operate. Something which office development is not very good at supporting (see Chapter 4).

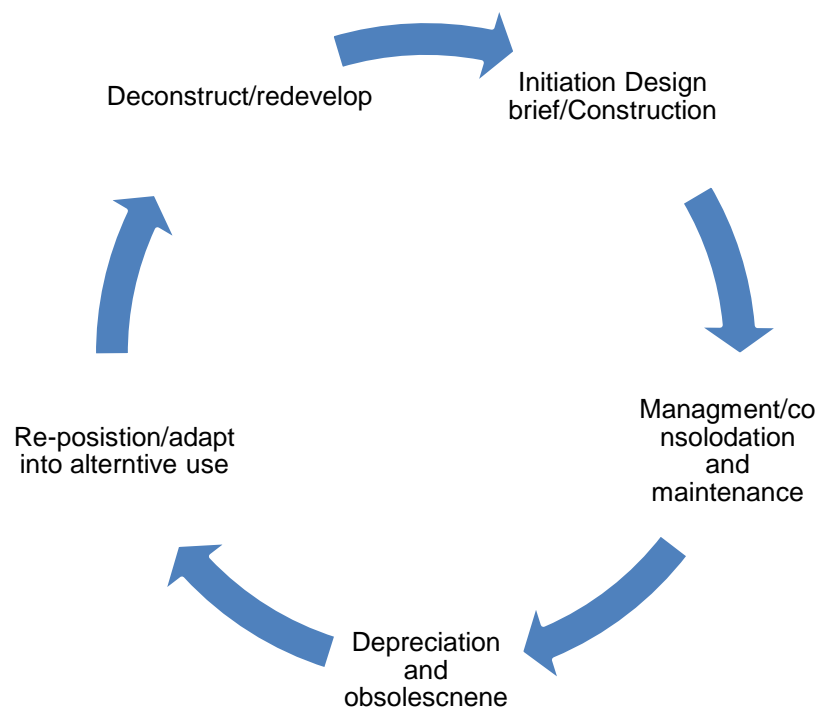
In 2001, 17 of the biggest software developers came together to sign the Agile Manifesto which contained a list of ideas and principles that were often discussed but rarely voiced in open debate because they contradicted the orthodox institutions of systematic development. Over the past 14 years, the 'Agile Manifesto' published in 2001 by the Agile Alliance and its adjunct the 'declaration of independence' (published in 2005) have strongly influenced software and organisational development. In line with the principles outlined in both documents it is possible to sketch a basic agile manifesto for commercial real estate development and its institutional environment:

- Uncertainty in urban development is expected and managed through iterations, anticipation and adaptation
- Building productivity is maintained through situationally specific strategies, processes and practices
- Agility and adaptation is prioritised over conformity in building use and spatial strategy
- Changing requirements are welcomed. Agile processes harness change for competitive advantage
- At regular intervals, user demand should be assessed, leading to the fine tuning and adjustment of property development.

Building agility argues that repeated temporary use should be considered the norm in urban development and buildings which are traditionally designed to last for centuries will have multiple tenants and types of use. It is situated within concepts of ecological and evolutionary resilience. These positions presume that the urban environment goes through a continual process of change (Davoudi, 2013), equilibrium is continually moving and adapting. Occupier demand displays these characteristics, it is a complex adaptive system, however the built environment does not; it is often static. Building agility regards process, movement and change, in particular the innate ability of a building, and wider location, to coexist and adapt to new circumstance and threat.

This perspective also has synergy with the building life cycle theory adopted by Remoy (2010) and Wilkinson et al (2014) which considers a building over its entire life. This is because research participants indicate that in order for buildings to change repeatedly in relation to changing user requirements they must be considered over the long term. This is in order to consider the building beyond its initial functional design. Consonant with this theory the office building is recognised as a cyclical process. Figure 5.1 indicates this process,

Figure 5.1 The Building Life Cycle



(Source: Remoy 2010)

Firstly, an office building will go through briefing, design and construction. Amid the office building lifespan, use and activity then evolves through adaptation. At intermittent stages in the life cycle the office building will reach a period where its future use and value will need to be evaluated and appraised in order to consider its ongoing viability (Remoy, 2010). During each phase of assessment an office building could be left alone, mothballed, receive maintenance, be repurposed in existing use, transformed into alternative use or deconstructed and redeveloped. The office buildings life span is therefore directly related to depreciation and obsolescence and how both factors are managed and exploited through building agility. The proceeding sections of this chapter reflects upon how secondary office buildings can efficiently and effectively respond to the incidence of secondary office vacancy and the considerations that need to be evaluated in any appraisal in relation to this issue.

5.3 Secondary Redux: Managing Secondary Office Vacancy

The previous section has restated adaptive re-use and set out an alternative definition of the concept based on building agility. This section centres this definition and explicates the management strategies that are available within the progressive vacancy typology set out in Chapter 4. Table 5.2 describes this process and should be read from left to right in the same manner as the model at the end of Chapter 4. The vacant office typology in Chapter 4, separated natural and structural vacancy and the respective layers of vacancy. It then positioned this against the prime and secondary office markets, before delineating an extended series of vacancy conceptual processes. This section adds an additional three columns, vacancy strategy, management options and degree of intervention. The intention is to extend the observation that secondary office property is multi layered and to exhibit the various opportunities inherent in secondary office vacancy. Following the views of research participants, the central argument in this section is that secondary office vacancy should not be seen as a static problem, rather, it is imbued with varied potentialities, both good and bad. This contention is illustrated by a leading Investment Director, who states,

"Secondary office properties are like the penny stocks in the Wolf of Wall Street, there are huge amounts of yield to be made with the right strategy. Only in

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secondary office property you do not need to pump and dump, you just need to change their mindset."

Indeed,

"Secondary office buildings are such an opportunity in terms of investment return. Yes, they have varying degrees of problems...but this creates opportunities for mis-pricing and financial killings not seen in the prime market"

(Finance Manager).

Reflecting the subsequent findings in Section 5.5, this is because,

"A lot of the pre 1980's properties have transferable image and in built tolerance...of course everything built after this point has anything but"

(Developer).

Furthermore, a leading developer argues,

"Buildings in decent locations do not always give best value. A better yield can be found in struggling properties in struggling locations...in the so called problem building typologies...where any problems can be counteracted by vision and appetite...the very best buildings are those in prime locations but that are under-priced, serious value can be found in these areas."

Yet, the same developer illustrates the temporary nature of these opportunities,

"The Urban Splash bonded warehouses are an historical example of agility. However, the weakness in the theory is that eventually a market develops for such buildings and their purchase value increases, nullifying any economic viability...Urban Splash eventually moved out of the centre of Manchester."

This proves that it is not only occupier demand that is fluid and dynamic, so are market opportunities, as value solidifies around new opportunities. Research participants indicate that the real challenge in building agility is moving from and challenging the orthodox way of doing things and developing new ways of working. A developer with experience in converting secondary properties illustrates the challenge and some of the inherent complexities involved in this process,

"Every building has a use; the challenge is finding that use and making it work. However, industry is not well disposed to thinking out side of the box and would rather stick to tried, well-trodden and tested methods. Industry is not in any way set up for change. There is no imagination or vision, it is a spreadsheet driven industry rather than creative industry."

A Property Manager then summarises this challenge,

"The key barrier to agility is appetite. It is eminently possible with a bit of vision. However, it still is not happening despite the obvious societal benefit. There is not any appetite or vision, this is more important than the costs and building specific issues which can be overcome with ingenuity."

In order to appraise this situation, this section is structured around the four vacancy management strategies outlined in Figure 5.3,

1. Exploitation
2. Repositioning
3. Renewal
4. Removal

Each strategy is considered in progressive sequence, centred on the vacancy typology presented in Chapter 4 and in parallel with the associated management options for each strategy and the magnitude of intervention. These findings are then taken forward to inform the policy recommendation in Chapter 6.

Figure 5.2 Solution Typology

Segmentation		The market	Vacancy Process	Vacancy strategy	Management techniques	Degree of intervention
Natural Vacancy	Premium Vacancy	↓ Prime	<ul style="list-style-type: none"> • Cyclical • Frictional • Initial 	Asset Exploitation	<ul style="list-style-type: none"> • Consolidate • Corrective maintenance • Disposal 	Low
	Auxiliary Vacancy	↓	<ul style="list-style-type: none"> • Churn • Hidden • Strategic 	Demand Repositioning	<ul style="list-style-type: none"> • Mothball • Repurposing • Additions and removal 	Low to medium
Structural Vacancy	Evolutionary Vacancy	↓ Secondary	<ul style="list-style-type: none"> • Inefficient • Inertial • Transformational 	Asset Renewal	<ul style="list-style-type: none"> • Meanwhile use • Alternative use 	Medium to high
	Final Vacancy	↓	<ul style="list-style-type: none"> • Physical • Planning • Economic 	Removal and Redevelopment	<ul style="list-style-type: none"> • Demolition and Deconstruction • Redevelopment 	High

5.3.1 Exploitation

Exploitation is related to premium vacancy and the prime office market. As the name suggests it involves getting the most out of the vacant office asset and has connectivity with the forms of consolidation outlined by Remoy (2010). Exploitation preserves the property in its current state in order to sustain its existing use and ongoing service provision. Research participants indicate that central requirements in this strategy are,

"Pro-active managing agents who excel in good housekeeping and estate management. This should include forward planning, cyclical maintenance, and not dumping the costs on tenants in one go and considering shouldering the costs themselves"

(Head of Office Agency).

There are three management strategies associated with exploitation, corrective maintenance, consolidation and disposal. Indeed, research participants indicate that exploitation exists on a sliding scale, beginning with corrective maintenance, as the office building begins to depreciate, typically this will take place in the near term at lease renewal. This then moves into consolidation, which involves economic re-branding and tenant incentives such as reduced rents and easy in easy out agreements or tenants only paying the services charges related to tenancy. However, this can be difficult,

"In some cases, the ability of the property owners to let their property via aggressive discounting may be constrained as this would result in a technical breach of their loan-to-value covenant."

(Partner, Investment and Development, Global Property Consultancy).

While a leading Office Agent indicates that,

"Aggressive discounting and incentives are all well and good but they are very much a race to the bottom or a stop gap as alternative use is considered and then developed"

The final stage is disposal, when a property dips below an income threshold and the property is sold to realise the asset/site value and avoid management and operating cost. There is general consensus that it is this strategy that causes a great deal of secondary commercial office vacancy. The large investment companies, typically the financial institutions, sell their assets as soon as they dip below a rate of return. One Investment Director refers to this strategy as,

"Pump and dump."

Therefore, these strategies are also related to the nature of office building ownership. Illustrating this contention, a National Office Agent indicated the inherent complication and potential opportunity in alternative ownership,

"A typical investor, in particular institutional investors, will only hold a property for 1-10 years...Not long enough to consider change in use. However, foreign wealth investors have a slightly different perspective i.e. they are not necessarily looking for quick rate of return, rather wealth protection, such investors typically hold a property for longer."

In the first instance this appears to be an opportunity for the longer term ethos promoted in this section. However, the same agent indicates that,

"Foreign wealth investors have not really moved out of Central London yet, although they are starting to look further afield. A greater challenge for agility is their preference for status buildings of the highest specification. Foreign wealth investors are not interested in older buildings."

These findings corroborate the research of Agre (2005) who found considerable divergence between asset ownership and attitude toward building management.

Following 'pump and dump', research participants indicate that secondary properties are then purchased by smaller investors who target lower value markets, in a continuation of the ever depreciating return on investment. Research participants indicate that there is a great deal of transference between consolidation, disposal and mothballing (which is introduced in the next strategy). Research participants indicate that these management techniques are the most common in terms of current market practice. Each technique involves a degree of,

"Wait and see what the market does"

(Investment Agent).

These options are largely laissez faire in intent and in themselves represent a significant cause of secondary office vacancy as landlords and investors await a better day for their assets, which may not arrive, and seek to avoid the payment of empty property rates.

5.3.2 Demand Re-positioning

Demand re-positioning involves within use change and typically forms a bridging point to the next vacancy scenario which is renewal. Research participants indicate that it is this scenario that is often ignored by landlords and investors, who often jump straight to the renewal or removal scenarios. Reflecting this situation, a Head of Office Agency argues that,

"Repositioning is a consideration but is very difficult to justify in terms of achievable rent after completion of works."

The three management techniques are mothballing, repurposing and addition/removal. Mothballing has already been explained but in short it involves postponing of conveyance in order to be revisited in the future. Although this technique is not considered a positive strategy (as it contributes to market overhang) it does constitute a form of repositioning as the property has been consciously removed from its original purpose. This strategy allows investors and landlords to avoid high holding costs, such as running costs, and often runs hand in hand with an effective empty property rate

avoidance strategy. However, the downside to this approach is that empty office buildings are costly to secure, may suffer from crime and anti-social behaviour and do not make any money for the landlord.

Research participants indicate that mothballing is a significant cause of vacancy as landlords and investors wait for or consider alternative futures. They indicate that this is because landlords and investors prefer to wait for better futures, rather than actively going out and creating the conditions for change themselves. Therefore, there is a disjuncture between mothballing and repurposing and they should not be seen as symbiotic. Pro-actively repurposing refers to the realignment of a given office asset with a new target audience. Reflecting this situation, in recent years, property companies like Citibase, Bruntwood and Overbury, have begun to specialise in this secondary office market.

Of particular prominence is the serviced office model, which has connectivity with auxiliary vacancy in the conceptual model outline at the end of Chapter 4. There is widespread consensus that prime offices are in short supply, (the stock take in Chapter 4 corroborates this observation) and that there is a need for good quality secondary fill in space. Indeed, there is growing acceptance that certain buildings will not be let exclusively to one tenant, rather, they will be multi let entities with transient tenancy. In these buildings it makes sense for the landlord to control and maintain the common areas in order to always give the impression of a new building. The approach was pioneered by Regus but has increasingly been taken on by additional companies like Citibase Ltd. Indeed, the Chief Executive of a leading serviced office provider argues that,

"A stranded asset often is not a bad building that tenants do not want. Regularly it is an office that is not handled appropriately by a landlord or agent who do not propose appropriate propositions for occupiers or locations. There is enormous scope to refocus these buildings."

Furthermore, corroborating the disconnect between mothballing and repurposing techniques, the same Chief Executive argues that the office sector has been lethargic in accepting this change and changing their business models accordingly, evoking the sentiments of building agility he indicates that,

"Conventional conveyance practice, such as the long lease, does not accommodate the short term priorities of small businesses who want easy in, easy out agreements and the ability to grow and contract quickly."

Moreover, demonstrating the bridging potential of demand repositioning and asset renewal, the same research participant goes on to contend that,

"The small business sector provides a useful means for further exploiting an office after first use and ahead of any major adaptation."

The third management technique is that of building addition and removal and is physical in nature. Research participants indicate that in certain cases adding extra size to a building can help to retain or attract new tenants while the removal of unwanted building elements was also deemed positive in relation to overall marketability (see Kincaid, 2002 for a more detailed discussion of this issue under the rubric of creative destruction). This is because in certain instances and locations, businesses outgrow their premises. This finding formed an interesting contrast to the prevailing consensus in relation to declining space requirements. It demonstrates that new business trends are not uniform, rather they are diverse. It is important to note that this trend is constrained by available expansion space and the planning regulations in relation to building mass (considered in greater detail in Section 5.5 in relation to building elasticity).

5.3.3 Renewal

Echoing the observation of Hancox (2012), research participants indicate that there are only two options for structurally vacant office properties, they adapt into alternative use or they are removed from property supply all together. The next vacancy strategy, contiguous with evolutionary vacancy is that of renewal. There are two management strategies, notably meanwhile use and alternative use. Meanwhile use, as the name suggests, involves a temporary fix and something that takes place in the interval between one use and the next. It is a positive version of the mothballing technique described in repositioning and describes when office buildings are taken forward by entrepreneurs and community groups to be used for social and cultural purposes until they can be re-

commercialised. This strategy helps landlords and leaseholders to enhance security, maintain the premises and lower the running costs of the building and improve the overall prospects for commercial re-use.

This is echoed in the meanwhile use literature that has sprung up in recent years (Henneberry 2016 Forthcoming). Secondary office buildings create the opportunity for DIY urbanism (Oswalt et al., 2013) and experimentation at comparatively low cost (Ziehl et al., 2012). Secondary space can support cheap start-ups (Blummer, 2006), entrepreneurship (Graham, 2012) and assist economic development (Columb, 2012).

The New Retail Quarter in Sheffield and the Harland and Wolff offices in Belfast have both used meanwhile uses to support and catalyse stalled urban regeneration projects. Meanwhile use has received little attention in the academic literature (Lauren Andres, 2013, is a notable exception) and never in the context of office property. Yet, research participants report that it is increasingly used to soften the overhang of secondary office property. For instance, Croydon Borough Council has even created a meanwhile use strategy toolkit to encourage and enable the exploitation of Croydon's underutilised spaces with beneficial new uses.

The toolkit includes a generic meanwhile lease, an intermediary meanwhile use lease and a meanwhile use sub lease (<http://croydonmeanwhileuse.org.uk/>), which can be used in negotiation with landlords. The toolkit also provides advice in relation to exclusion of tenure agreements, which acknowledge that the meanwhile use will move once a new use is in place. In many ways all of the strategies outlined in this model are meanwhile, however, this specific technique is proactive and looks to exploit the transient nature of the built environment, exploiting the vacancy phenomena, rather than ignoring it.

The next management technique, alternative use, has received most attention in academic literature in relation to adaptive re-use (see Chapter 2). It is possible for vacant secondary office buildings to be adapted into various types of alternative use (reducing the incidence of vacancy), including housing, hotel, retail and leisure, sheltered accommodation and combinations of all of these in mixed use development. Indeed, research participants indicate that outside of Central London and the regional cores, normality in the future will be a mixture of use, as landlord's battle to generate income from their stranded assets. However, this needs to be balanced against the opposing view that,

"Mixed use/and regular change in use would frighten most of the industry to death as it would mean a fundamental revision of the way properties are valued and the way finance is lent out in terms of risk"

(Finance Manager).

Interestingly, research participants indicate that alternative use can be linked back to the disjuncture between mothballing and repurposing. Indeed, a Planning Manager indicated that the main barrier to bringing secondary offices back into original function is that,

"Alternative uses – particularly housing or housing-led redevelopment - are much more lucrative than in use change in the vast majority of cases. Therefore, why would the owner of vacant secondary office accommodation bring the unit back into use when there could be potential for conversion, especially where the building falls into disrepair or has been vacant for a long time?"

This strategy improves and changes the physical and economic nature of the dormant secondary office building and counters deterioration and obsolescence. This method can also be quicker than redevelopment because it does not need as many preliminaries or necessarily need a formal planning application (especially in England following relaxation of PDR). The result is a shorter construction programme and increased churn of cash flow and investment as return can be generated over a shorter time period. Indeed, a leading architect stated that,

"Re-use can be cheaper than traditional demolition and rebuild. The actual construction costs, particularly in conversion to new use, are probably very similar... but the pre-lims, planning, digging of foundations and time taken in new development increases these costs exponentially. So the cost and the viability of a project is really a question of time, turn around and momentum."

Yet, in contrast to the previous strategies it can be disruptive and expensive. However, this is counterbalanced by the observations of a leading Office Agent,

"Liability for maintenance in alternative use can be less than for office use, housing and hotel can be cheaper as specification is not as onerous."

In addition,

"Converting office buildings into alternative use avoids some of the ridiculous tedium associated with the Code for Sustainable Homes (since abolished). Conversions only need to align with Eco Homes Standards, which are less of a burden. In addition, Section 106 and affordable housing conditions do not apply under recent permitted development rule changes either"

(Director, Construction Firm).

However, research participants indicate that change in use projects contain considerable uncertainty and building costs can quickly escalate, exacerbated by new functions not being part of the building owner's core business. To be successful, the new use must suit its surroundings and be supported by appropriate amenities while its development must be strictly managed. These points will be considered in more detail in Chapter 6 where an agile place strategy (see Section 6.3) is outlined alongside the requirements for new education and training in the specific area of office building agility (see Section 6.6).

5.3.4 Removal and Redevelopment

The final vacancy strategy is removal and redevelopment and is contiguous with final vacancy (ultimately, most properties will reach this stage unless they have statutory protection). These secondary office properties have no future in either present or alternative use and should be removed from commercial office supply altogether to make way for new development. It is important to note that this thesis does not argue for the retention of all vacancy secondary office stock. Rather, it contends that meaningful steps should be taken to prolong the asset life of secondary office properties in order to maximise potential value before engaging in a costly and time consuming process of demolition and redevelopment. This is because certain properties simply have no future

because of a combination of prohibitive factors. Indeed, a national Capital Markets Manager commented that,

"Instead of all this sustainability crap, it needs to be recognised that some of these buildings need to be pulled down and replaced with something better...and the sooner the better."

Bullen (2007) states this very case, arguing that where removal and re-development is straight forward, construction costs can be far lower than conversion and that decision makers need to be aware of this possibility. This is because all renewal projects will not be economically viable due to restrictive building characteristics, including difficult designs, adverse location characteristics, or prohibitive legislation and listing (Holyoake and Watt, 2002). However, research participants indicate demolition is not a straight forward process. An Investment Agent remarked,

"Who is going to pay for demolition when there is no obvious end use? Not the owner, the result is blight."

There are two interrelated management techniques associated with this vacancy strategy, demolition and deconstruction and redevelopment. Wilkinson et al (2014) indicate that deconstruction involves taking apart a building at the end of the life cycle in order for these parts to be re-used elsewhere. In doing so, this continues the holistic perspective of building agility and extends the building life cycle into the wider urban area.

The final column in Table 5.3a considers the magnitude of intervention involved in each vacancy strategy. The exploitation strategy involves low intervention and can mostly be covered under lease renewal or by sitting back and waiting for the market to recover or simply selling the asset. The repurposing strategy is associated with low to medium intervention as it may involve a certain degree of physical intervention as new structures are added or when an office building is remodelled to cater for multiple tenants. This may involve partitioning and work to the entrance and common areas to make the building friendlier to tenants and customers. Renewal is considered a medium to high impact intervention. Although meanwhile use can be relatively low impact (often led by an informal tenant) transformation into alternative use involves considerable

physical intervention into the building structure, layout, facade, building services and aesthetics. Finally, removal and redevelopment is high impact and involves severe disruption. Therefore, it is expensive and there could be considerable delay in final outcome.

Clearly, there are opportunities and challenges involved in each option. However, research participants indicate that these challenges can be mitigated and opportunities exploited if the building is seen as a dynamic process, rather than functional asset, which needs to be managed across the entire building life cycle in order to extract continual value. Indeed, in a mixed use future, secondary office buildings could be a mixture of all four management strategies at the same time. Illustrating this situation, a leading architect commented that,

"In an ideal world the building will continue to evolve, certain parts will remain the same, some parts will be repositioned, certain parts will be changed into alternative use and certain parts of buildings will be demolished to make way for improvements...why on earth should we see buildings as static objects?"

This section has considered the various strategies that can be used to exploit secondary office vacancy, the associated management tools and the potential degree of intervention in each strategy. The next section considers the economics of building agility and the importance of the end user. Research participants indicate that it is these considerations, particularly the structures of local rental markets, the potential economic return and the presence of demand that makes or breaks the viability of, and the eventual decision in relation to, the choice of vacancy strategy and the deployment of each management tool. This is then followed by a consideration of the physical characteristics of building agility in relation to the respective office building eras identified in Chapter 2.

5.4 The Economics of Agility and the End User

In 2012, Abstract Group Chief Executive Mark Glatnam, responsible for Ruskin Square's Renaissance development in Croydon, questioned the financial viability of upgrading old offices. He warned that much of Croydon's old office stock is only fit for demolition and should not be reused. However, research participants indicate that the

situation in the UK is not so desperate. Rather, following the strategic options explicated in Table 5.3a there are a variety of models and methods that can be followed to exploit the financial potential in vacant secondary office buildings. Yet, supporting Mark Glatman, research participants did agree that the evaluation and choice of management strategy was dependent on relative economic viability. Hitherto, academic research has not focused on the economic aspects of building agility, rather relying upon implicit taken for granted assumptions. For instance, Wilkinson et al (2014) when describing their own assessment and decision making tools indicate,

"Though it is not made explicit, the financial feasibility of conversion is implicitly taken into account in the different tools that are developed to assist decision-making about conversion of office buildings"

(Wilkinson et al., 2014:122).

5.4.1 Economic Factors

This section responds to this deficit in knowledge by considering the economics of agility, before outlining a simple appraisal tool that can be used to help assess the economic considerations of building agility. Research participants suggest that several decision making criteria are important, all of which revolve around the consideration of highest rent/sale value and lowest rent/sale risk,

- Which option has the lowest capital outlay/net saleable area?
- Which option has the greatest net saleable area?
- Which option is quickest in order to minimise holding costs?
- Which option has the lowest overall economic development risk?

This is then supplemented by the relative ability to obtain a secure method of finance which is then further mitigated by the liquidity, cost and duration of the respective finance method. All of these considerations must then be applied to the relative rental structures in the location under consideration. This is because the value of rent and the potential cost of initial purchase and potential sale, will govern how much finance is

available to fund development. Broadly speaking, the better the rent, the greater the potential agile capacity of an individual secondary office building. This is because a landlord or developer must be able to first of all demonstrate that the economic cost of development will be covered by the chosen management strategy and then be able to demonstrate an appropriate level of investment return. This means that in any consideration of economic viability there must be an evaluation of the following attributes,

- What is the current market rent, capital value and yield of the asset?
- What is the potential acquisition cost (if appropriate)?
- What is the potential intervention cost?
- What is the potential cost of finance?
- What is the potential market rent, capital value and investment return of the asset after intervention?

This must then be situated within an overall consideration of market conditions at the macro and relative location scale. This is because the overall economic condition impacts the cost of finance and the general demand for property. For instance, movement, upward or downward, in interest rate levels can have a significant impact on the cost of borrowing and overall economic viability. Moreover, economic viability will also be influenced by the cost of development and the relative structural value of rent.

5.4.2 Appraising Agility

Table 5.1 summarises the economic considerations for each management strategy and can be used as a simple guide when appraising the economics of the various secondary office management strategies. For the purposes of discussion it should be read from top to bottom.

Table 5.1 **Evaluating the Economics of Agility**

Strategy	Exploitation	Repositioning	Renewal	Removal
1.Valuation method	Investment	Residual	Residual	Residual
2.Gross floor space	As existing	As existing	Better if there is elasticity	Depends on new project
3.Net internal/useable area	Initially high but depreciates without intervention	Medium to high	High	High
4.Occupational demand	Initially high but depreciates without intervention	Medium to High	High	High
5.Market rent	Initially high but depreciates without intervention	Medium	High	High
6.Yield/Rate of return	Initially high but depreciates without intervention	High	High	High
7.Intervention cost	Low, associated with general maintenance	Low to medium	Medium to High	High
8. Intervention programme	None	Low to medium	Medium to High	High
9. Contingency and risk	Low	Mid-range	High	Low

(Authors own)

Row 1 details the relative type of valuation method for each management strategy. Although not an obvious concern in determining viability, rather a method, research participants indicate that the assumptions underpinning the respective valuation methods have inherent built in assumptions that undermine the agile perspective. The exploitation strategy, basically the 'do nothing' approach associated with the first years of occupation, will typically use an implicit investment valuation underpinned by the book value of the property. The other three strategies, because they are based upon physical intervention, use the explicit residual valuation in order to arrive at a net present value (NPV). This makes sense because the actual costs of development, in respect to potential rent, need to be understood in order to calculate a realistic rate of return

However, corroborating similar findings from Remoy (2010) in the Netherlands, there is often considerable disjuncture between respective valuation methods. This is because the movement between investment to residual valuation necessitates an evaluation of real property value which is often considerably lower than the original book valuation. The result is that landlords are not necessarily willing to accept new valuations (preferring the book value predicated on 100% rent) in order to underpin agile building intervention and prefer to mothball and wait for the market to improve, or for the value of their capital asset to appreciate over time. This relates back to the causal nature of secondary office findings in Chapter 4 and the issue of institutional norm and cognitive and behavioural bias outlined in Chapters 2 and 4. In this case an unwillingness to accept the realities of the economics of development results in vacancy and blight.

This issue is particularly severe in high value locations where landlords can assume with a degree of certainty that their underlying land asset will continue to appreciate in value, hence the problem of land banking and its association with blight. The compound loss indicator outlined in Chapter 4 can be used to question the book valuation and to help calculate the NPV as it provides costs for operational performance and an indication of market value.

Row 2 deals with gross area. Under the exploitation and repositioning strategies the gross area will stay the same. The exception to this rule is the addition of extensions or the removal of unwanted building elements. Both options have the potential to increase the value of the project, firstly an extension has the potential to increase the net internal/useable area of the building, while creative demolition (Kincaid 2002) has the potential to remove unwanted parts of the building to increase the overall marketability

of the potential product. Under the renewal strategy the gross area has the potential to decrease or increase in line with building elasticity (see Section 5.5 for a more detailed discussion of building elasticity). Under removal and potential redevelopment, the gross area is unknown but a presumption can be made that it will more efficient than the previous building use.

Row 3 considers the net internal/useable area, that portion of the gross area that can be exploited for economic purposes. Under exploitation this will begin at an efficient level but will depreciate without intervention as buildings become functionally obsolete. Under repositioning this will likely be of medium to high efficiency as landlords will be able to reposition their asset to attract new office demographics, the serviced office model is an example of this strategy. Under renewal the net internal/useable area will likely be high as an appraisal of the most efficient spatial use will inform the eventual re-use option. Under removal and redevelopment, the net internal/useable area will also be high as provision will likely be made to maximise the value of new development.

Row 4 considers occupational demand. Under the exploitation strategy, demand will presumably be high in the first instance (especially if there are pre-lets in place) however this will depreciate without intervention. Under the demand repositioning strategy, demand will likely be high as any repositioning strategy should be exploiting recent changes in the nature of occupier demand. Under the renewal strategy occupational demand will be high, again, because an appraisal of alternative use will consider where occupier demand resides. Under the removal and redevelopment strategy demand will also be high, again because an appraisal of most appropriate new use will presumably be conducted. Research participants indicate that the end user, their requirements, and what they are prepared to pay for a product in a particular place, and at a particular time, is a fundamental requirement in determining the economics of building agility. This is because the economics of building agility is predicated upon a derived demand and if it does not exist or is not adequately catered for, building agility will fail. This relates back to the importance of human behaviour outlined in Chapter 2 and continues the theme in Chapter 4 in relation to the structural change in the nature of occupier demand, particularly its dynamism.

An appraisal of occupier demand at the earliest possible opportunity will allow the progression of the intervention to be designed with the purchaser/tenant in mind. This is because the viability of building agility will depend on the relative characteristics of

the office and potential alternative user markets as well as the actual cost of intervention. Research participants indicate that in certain instances, as end users become more discerning in their demands, (see Chapter 4) any intervention needs to be able to compete with characteristics of a new build scheme. Otherwise the potential return upon investment will be compromised (this is particularly prevalent in prime, central areas). However, a leading developer indicates a positive aspect to this challenge, specifically in relation to transformation into alternative use,

"If you can get the pitch right, with high quality internal and external finishes and good ancillary uses, the product will be attractive to funders and investors."

The observations in Section 5.2 reflect this situation in relation to foreign investors. If the intervention is not up to prime new build specifications the result could be a net internal/useable area having a lower value than that of a new build equivalent. This means that in areas where this type of investment is prominent, such as in Central London, the value of the removal and redevelopment strategy may outweigh the repositioning and renewal strategy because the value loss associated with perception can outweigh the cost reductions and time savings associated with renewal.

However, not all end users will be associated with high end markets. Different vacancy strategies will have different potential end users which will vary according to contingent circumstance. For instance, the repositioning strategy, particularly the serviced office model, reflects the new/small business environment which necessitates flexibility, adaptability, agility, ease of entry and exit and a sufficient range of services and products to provide security and comfort, rather than the spectacle of high value. It is a model that is increasingly challenging traditional office conventions and can trace its lineage to the first business centres in the 1970's.

Yet, the end use is not always defined by an appraisal of occupational demand. It can also be driven by the availability of financial incentives. This is particularly evident in relation to the Governments Business Premises Renovation Allowance (BPRA) which allows developers to write off up to 100% of their capital expenditure on the conversion of office properties that have been vacant for more than one year in assisted areas (defined by European Union State Aid legislation). This policy specifically precludes the

conversion of such premises into residential use, hence, the proliferation of hotel conversions in certain town and city centre locations. In Newcastle upon Tyne, the former Scottish and Newcastle Brewery building, Baron House, Eagle Star House/Zurich House, the Co-op building and Proctor House have all gone through a BPRA equity system and been converted into hotels including Sandman Signature, Hotel Indigo, a Premier Inn and a Hampton at Hilton respectively.

Figure 5.3 The Hampton at Hilton in Newcastle upon-Tyne



Source: Newcastle Evening Chronicle

Row 5 considers market rent. Initially, under the exploitation strategy, market rent will be high as the building is new, associated with the prime market and presumably aligned with the requirements of demand. However, this will depreciate without intervention as a given building deteriorates. Under repositioning the market rent will likely be of medium value as any strategy will likely target a different type of market such as business start-ups and the small business community. Although these businesses do not pay as much rent, they do offer the opportunity of filling a building and maximising the net saleable area. Under renewal the market rent will likely be high, as the best value re-use option

can be targeted. Under removal and redevelopment rent will also be high, again, because buildings can be directed toward the most lucrative demand profiles.

Row 6 considers the rate of return a landlord or developer will make after the cost of intervention and or acquisition. Under exploitation, the rate of return will initially be high, however this will depreciate without intervention as a given building becomes less attractive to tenants and rent quantum and value recedes. Under repositioning the rate of return can be recovered through repositioning strategies which do not necessarily require major cost intervention. Again the serviced office model is an example of this strategy, intervention methods are often superficial, dealing with aesthetics and comfort, rather than major structural change. Under this model it is about the service that is provided by the landlord rather than reliance on the physical building. Under the renewal strategy, the rate of return can be maximised as the most lucrative alternative use can be targeted in order to counteract the cost of intervention, thus protecting and potentially increasing the overall rate of return on the original investment. Under the removal and redevelopment strategy, the rate of return is lowest because of the high cost and time associated with intervention.

Furthermore, different landlord sectors will be able to derive additional levels of yield. For instance, local authorities have considerable surplus office space because of recent cuts, with very little potential for economic return. However, a Business Rates Manager at a local authority presents the following argument,

"If these properties are converted into housing, the council will receive a 100% new council tax contribution, expanding its council tax base. This is then 100% matched by the New Home Bonus Scheme for 6 years."

This issue needs to be seen in contrast to the 50% business rate contribution a local authority would receive from an office building (the rest goes to Central Government and is then redistributed). This demonstrates the incentive for local authorities to convert its own office accommodation into residential use and the temptation to grease the wheels of private sector conversion projects for similar reasons. The implication of this is the potential increase in office rents due to reduced supply and the potential dissolution of office based locations. This point will be revisited again in Chapter 6 where the various threads of public policy in relation to secondary office vacancy are pulled together in

order to propose some principles for a public policy framework in relation to secondary office property.

Row 7 considers the cost of intervention. Exploitation is low impact because the asset is relatively new during this period, mostly involving routine maintenance. The cost ratchets up during demand repositioning as this will involve the first stage of physical change and rebranding. However, the cost will be relatively low as the basic function is retained. A renewal strategy will likely be medium to high cost as it will generally involve fundamental change to a building's physical characteristics (the physical considerations in relation to building agility are considered in detail in the next section) although this is somewhat mitigated if the building in question has assistive characteristics. Any removal and redevelopment strategy will also involve high cost as any project will involve demolition, potential remediation and then rebuild.

Row 8 considers the intervention programme, in other words the length of time an office building will not be providing a rate of return and the length of time that contractors need to be paid to carry out scheduled and planned works. This issue is not applicable under exploitation as there is no need for an intervention programme, or any work can take place during occupation or as part of the lease renewal process. Under repositioning, the intervention programme increases, however, it is still relatively light, further indicating the convenience of this strategy as a prelude to more extensive intervention in the future. Under the renewal strategy, the programme is more considerable as physical intervention is necessary. However, because preliminary investigations are not necessarily needed for such projects, and because recent permitted development right changes have reduced the need for planning, the intervention programme can be relatively short. Under the removal and redevelopment strategy the intervention programme is lengthy, as the degree of physical works will be great, planning approval will be necessary and repeated preliminary investigation will be essential.

Row 9 considers contingency and risk, this relates to the value of contingency and project tolerance that needs to be built into the respective vacancy strategies in order to mitigate against unforeseen circumstances and delay (it also acts as a proxy indicator for the overall risk associated with each vacancy strategy). Under exploitation the level of contingency is relatively low as the degree of intervention is minimal. However, this is a relatively short-term assessment of risk as it does not value the potential loss associated

with doing nothing. The level of contingency increases under the repositioning strategy as the degree of physical intervention increases. However, the value of contingency will increase if additional physical structures are being added or unwanted structures removed.

The contingency and associated risk is highest for the renewal strategy as there are considerable unknowns involved in converting a building into alternative use which are often only discovered during physical works. This can mean considerable reliance on preliminary valuation at project initiation and the need for stringent cost control throughout the project as progressive architectural instructions mount up. During this process there is considerable risk that the actual cost of the project will diverge from the original preliminary valuation. This demonstrates the essential need, and consequent training demand, for specifically trained agile quantity surveying support. This skill set must work in tandem with the equally important need for retrospective building surveying at project initiation and throughout the works programme (this is discussed in further detail in Chapter 6).

Reflecting this situation, Shipley et al (2006) argue that uncertainty makes it more difficult to acquire development finance for transformation projects. This can also fuel an incorrect perception that renewal projects are more expensive, ruling such projects out before meaningful appraisal. The removal and redevelopment project contingency is relatively low as the degree of risk in new building construction is relatively well known and can be mitigated by standardised work practices. However, the project risk can increase substantially if the nature of demolition is complicated and the presence of harmful materials is either high or unknown.

Research participants indicates that Rows 4, 5 and 6 are the most important factors in any management strategy. This is because these central requirements define, in the first instance, whether a target market exists (and its specific requirements), how much rent it is willing to pay to underwrite the cost of intervention and how much financial return can be generated from the intervention. Importantly, research participants indicate that these considerations override any physical characteristic of vacancy. Clearly there are similarities between attributes of renewal and redevelopment. However, research participants indicate that the overall cost and time of development associated with removal and redevelopment is highest and that renewal is the cheaper option (a finding corroborated by Highfield 2000, Ball 2002 and Douglas 2006). Drawing on the

vacancy strategies outlined in this chapter, Chapter 6 outlines how they could be deployed through a pro-active building appraisal and valuation technique driven by Building Information Modelling (BIM).

5.5 The Physical Nature of Agility

One of the central arguments in this thesis is that academic research, in relation to secondary office vacancy and its potential agility, has been unduly physical in orientation. However, this does not mean that an alternative account should ignore the physical nature of secondary office vacancy and its potential re-use (rather, any physical analysis should be centred in a wider appraisal of socio-institutional construction). Certainly, any agile intervention into a secondary office building which involves physical intervention will demand a detailed building survey.

The following section provides a broad guideline for this process. It has most connectivity with the renewal phase of agility (as this intervention will involve the greatest degree of building appraisal) however, it can also be applied to the other vacancy strategies as the basic building principles will remain the same. This account should not be taken as an exhaustive physical account of the re-use process, rather, it is designed as a guide which can be used to inform building agility. This is because,

"There will be broad principles that all buildings and certain eras of buildings share. However, any intervention should be considered on a building by building basis because each case and location is unique requiring its own bespoke solution"

(Developer).

Barlow and Gann (1996) and Kincaid (2002) have conducted detailed appraisals of the physical factors involved in office building renewal based on research conducted in the final decade of the 20th century (see Chapter 2).

They explain that there are seven building specific aspects of re-use,

1. Size, Height and Depth
2. Building Structure
3. Envelope and Cladding
4. Internal layout and access
5. Building services
6. Acoustic Separation
7. Fire safety measure and means of escape

Instead of embarking on a new study of the physical features of building agility, this investigation uses the building appraisal tool developed by Kincaid (2000, 2002) to benchmark the physical characteristics of building agility. Indeed, the Kincaid (2002) appraisal benchmarked previous work carried out by Barlow and Gann in the 1990's and has since been used to inform the work of Remoy (2010) in the Netherlands and Wilkinson et al (2014) in Australia. In many ways any work conducted into the physical and sustainable nature of building agility is merely a recast of the Kincaid project (see Wilkinson et al., 2014). By using this strategy, the physical benchmarking carried out in this thesis can trace its lineage to the early 1990's and refreshes this work for the current period.

Drawing on the views of research participants and supplemented by available literature, the proceeding section benchmarks this typology in the present day against the respective building typologies identified in Chapter 2 and later analysed in Chapter 4. It should be read in conjunction with the office history detailed in Chapter 2, which details the design and construction paradigms that emerged alongside the evolution of the commercial office. By following this process and drawing the building era thread through the empirical chapters, it is possible to link the physical characteristics of secondary vacancy and agile re-use into the socio-institutional evolution of the secondary office phenomena. This is in order to judge the relative impact of building characteristics and the consequent opportunities and challenges inherent in each era of development.

Furthermore, following research participant input an additional four factors have been added to the appraisal of Kincaid (2002),

8. Location
9. Aesthetics

10. Accessibility

11. Amenities

Patently, the characteristics of material buildings determine a large part of whether a secondary office building can be re-used (Nutt et al., 1976; Barras and Clark, 1996; Kincaid, 2002; Remoy, 2010). Interestingly, findings suggest that the physical characteristics of building agility have not changed a great deal (tempered by changes in the building regulation and quality standards for existing office buildings and potential alternative uses). However, what is different is the translation of these characteristics across the different eras of secondary office construction. Findings suggest that certain characteristics are more and less prevalent dependent on the era of building development. In contrast to Remoy (2010), who indicates that older office buildings are less conducive to re-use in the Netherlands, research participants indicate that older office buildings in the UK are most agile. This is because modern office buildings are highly specified, less structurally sound and more likely to be located in mono functional areas which lack amenity, identity and access.

5.5.1 Size, Height and Depth

Markus (1979), Remoy (2010) and Wilkinson et al (2014) all indicate that building height, width and overall size are important factors in office building renewal. Indeed, Agre (2005) found that there is an optimum floor to ceiling height for re-use which must be a minimum of 3.6 metres. Height is an important factor as it indicates how many and what type of services can be contained within ceiling voids and/or raised floors. Similarly, building width is important as it governs the type of space arrangements that can be accommodated in a given space. Deep floor plates with low proximity to natural light or irregular shape can be one of the main barriers to re-use. This means that many of the pre-war office buildings described in Chapter 4 are excellent candidates for re-use because they had to rely upon natural light for illumination and ventilation and are therefore typically narrow in construction.

These buildings tend to have more daylight than more recent buildings, smaller floor plates and abundant floor to ceiling heights. In contrast, buildings built during the 1960's modernist movement are more likely to have deep floor plates following the first

steps into mechanical and electrical engineering. In the 1970's building depth receded again as building regulations emerged that governed office worker proximity to light (an observation also made by Remoy, 2010 in the Netherlands). Later, buildings built after 1980's widened again as developers attempted to maximise the quantity of working space in relation to floor space.

5.5.2 Building Structure

Furthermore, Markus (1979) and Wilkinson et al (2014) indicate that construction type is an important characteristic in potential re-use. Pre-war office buildings, because of their steel structures, are easier to change in contrast to the concrete construction favoured in the 1960's and 1970's. Penetrating these structures, in order to insert servicing arrangements is often problematic due to the proximity of reinforcing steel cables (Remoy, 2010). In addition, buildings built during this same period are more likely to contain hazardous materials like asbestos (inserted at the time for fire protection) which have major cost impacts. This is due to the need for removal in compliance with contemporary regulations (Bullen, 2007) which can damage the structural integrity of the office building. A critical factor in re-use is floor loading and whether such loadings can accommodate alternative configurations and use. Broadly speaking, commercial office structural frames and foundations have spare capacity when appraised for conversion into alternative use (this is particularly the case in older buildings which were not designed to minimal standards).

This reveals the possibility of adding extra floors at the roof level (in residential re-use this means the most lucrative pent house level of development) in order to increase the overall saleable area (depending on respective massing guidelines) and in order to exploit the full economic potential of the building asset. Illustrating this situation, Agre (2005) calls the ability of an office building to accommodate either vertical or horizontal extension 'elasticity.' In order to approximate this situation, Kincaid (2002) indicated that office buildings with floor loadings of 3kN/m² or less, were appropriate for residential conversion, those between 3 and 5 kN/m² were appropriate for retail, office and hospital uses, and those between 5 and 10 kN/m² were appropriate for light industrial uses, while those above 10kN/m² were more appropriate for industrial and warehouse uses. In addition to the ability of the building to expand vertically and

horizontally, the presence of a basement and its configuration is also important in the potential economic value of an alternative use. For instance, it is likely that M & E systems will be less space intensive in residential use. Therefore, existing basements in secondary office buildings can be appraised for their suitability for parking provision or conversion into leisure and gym facilities

5.5.3 Building Envelope and Cladding

Research participants indicate that one of the critical factors in re-use is the degree of external building change. This is because changes to building envelope, cladding and fenestration are typically the most expensive part of a re-use project. In the case of residential re-use, these issues are not covered in the recent permitted development rule changes for office to residential conversion (any change would demand a formal planning application). Illustrating this situation, a leading developer indicated that,

"Interventions in the facade are extremely expensive but often critical on efficiency and aesthetic grounds."

Furthermore,

"The newer the buildings the worse this can get, do not forget that housing typically demands more thermal efficiency than office."

(Leading Architect).

Research participants explain that the external arrangements of pre-war properties are most agile, and importantly, aesthetically pleasing to the general public. In contrast, properties built during the 1960's and 1970's are not popular with the general public but still contain considerable agility due to the inbuilt tolerances in construction. However, properties built during the 1980's and 1990's, although more popular in the visual sense, are low grade in terms of quality and agility. Furthermore, alternative building uses will typically demand windows that open, more recent air conditioned office buildings are

basically sealed units (something that has increased further with heat loss minimisation legislation) and will therefore demand costly intervention. A leading architect explains this variegation,

"Modernist prefabricated concrete is not popular but is quite agile. Historical buildings are in a win win situation as they are more popular and inherently re-usable. Later buildings are oddly considered attractive in a pseudo modernist sense but in terms of quality and agility are hopeless cases because they are so cheap."

Furthermore, illustrating the evolution of office development,

"Load bearing walls are a good start, however curtain walling is rubbish because it carries no dead weight apart from their own. The saying is true, these systems were designed to keep the weather out and the workers in...Although this reduced construction cost it dramatically degrades the changeability of buildings"

(Leading Architect).

In addition, more recent office buildings often have floor to ceiling curtain walling. This can complicate internal subdivision as any modification will likely have to interface with the external fabric which is not always possible with existing solid mullion lines (a factor also observed by EC Harris, 2013). Again this will involve costly intervention and potential programme delays alongside loss of watertight integrity during physical works.

5.5.4 Internal Layout and Access

Research participants indicate that spatial grid flexibility elasticity and flexible internal dimension with clear plans are best in terms of overall agility. This is because prohibitive structures undermine the overall usable space calculation. Indeed, a National Office Agent indicated that,

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"Basically the efficiency and flexibility of floor plan determines the changeability inherent in any office building."

Furthermore, a leading developer argued that,

"Free and clear plans are best - dense grids are really bad."

Summarising this situation, an Investment Agent indicated that,

"Basically it must be possible to divide available space into useable components."

However, this is contradicted by a leading architect with considerable experience of conversion, who remarked,

"Layout etc is often an overstated issue, a little lateral thinking and creative design can solve most problems. What restricts agility is guidelines and traditional ways of working."

In addition, Markus (1979), Kincaid (2002), Remoy and Van der Voordt (2006) and Wilkinson et al (2014) all indicate that building access (the means and number of entry and exit points) is an important factor in assessing potential agility. Indeed, a leading architect indicated that,

"It is a common sense equation; more access points mean more potential options."

Furthermore, research participants indicated that the location of the access arrangements was also important. An Investment Director commented that,

"A well designed and proportioned entrance on a prominent street front location is far superior to an entrance tucked away around the side or hidden in the corner of a building."

Research participants indicate that access is also an issue inside of the office building where access through and between floors defines how a potential re-use option can be laid out. A surfeit of stairs and elevators greatly benefits potential change. Corroborating this point, Remoy (2010) has observed that the presence of redundant elevators, stair wells and fire escapes are positive as they can accommodate servicing and ventilation. It is advisable to utilise this kind of spare capacity as removal can be costly due to the structural role often inherent in these building components. In a departure from the prevalent trend in this section, historical properties often have the worst floor access arrangements which can necessitate costly intervention. This is because these buildings often pre-date the mechanical lift and modern building regulations.

5.5.5 Building Services

Research participants indicate the characteristics of building servicing is a key cost driver in any re-use procedure. The consensus view point, in some respects counter intuitively, is that service arrangements in older secondary office properties are more conducive toward agility than those found in the more recent secondary office buildings. This is because pre-war buildings were constructed before the advent of mechanical and electrical servicing arrangements. Consequently, mechanised HVAC and electrical services were incorporated into these buildings in retrospect and are therefore not deeply embedded in the building fabric. During the 1960's and 1970's servicing arrangements began to be integrated into buildings, and this was continued during the 1980's and 1990's alongside the ICT revolution and minimum cost measures. Reflecting this situation, a leading developer indicated that,

"More recent office buildings are costly to change because they were built for cost and energy savings resulting in overly tight construction which is difficult to unpick. These sealed properties, often have massive floor spaces, ingrained services and tiny floor to ceiling heights which result in sick building syndrome."

Reflecting the observations of Kincaid (2002), research participants indicate that servicing issues can be divided into the broad typology of mechanical and electrical

engineering. In relation to mechanical engineering it is important to be cognisant of the following issues when considering re-use,

- The position of plant (and its capacity and controllability)
- The type of heating, ventilation and air conditioning systems
- The degree of climate and comfort control
- The supply and distribution of water
- The provision of sewage and drainage
- The quantity and location of sprinkler systems
- Gas supply

In relation to electrical engineering (again reflecting the findings of Kincaid, 2002) research participants indicate that any re-use project should be cognisant of the following issues,

- Lighting system specification
- Power load capacity
- Small power supplies
- Building connection, incomers and mains arrangements
- ICT arrangements and capacity
- Standby provision
- Security and alarm system arrangements

Reflecting the observation in Chapter 4 in relation to the pace of technological change, research participants indicate that servicing arrangements can change swiftly. Many of the servicing issues over recent decades have revolved around the provision of raised floors and suspended ceilings (for instance to accommodate communication technology). The provision of which necessitates ample floor to ceiling heights and allows quick and easy upgrading of servicing arrangements. However, this is starting to be superseded by wireless technology which does not need the provision of zone based information points. This demonstrates how quickly building characteristics can change (Agre, 2005) and will be revisited again in Chapter 6 where an argument is put forward for long life, loose fit commercial office building design.

5.5.6 Acoustic Separation

Research participants indicate that there is also clear demarcation between building eras in relation to acoustic separation. Acoustic separation is important in any alternative use, such as housing, student accommodation and hotel, as these uses will likely demand insulation between units of accommodation. A leading architect described this situation,

"Acoustic separation between walls and floors is most problematic in the oldest and the newest buildings. Older properties have thinner walls and floors, while the newest properties have been built cheaply in relation to the minimum requirements for office use which fall a long way below the requirements for alternative use. In contrast, buildings built in the 1960's and to a lesser extent the 1970's have considerable in built acoustic tolerance due to their reinforced construction."

This is one of the rare situations where research participants indicate that pre-war office properties are problematic (although the negative theme in relation to more recent properties continues). This is because pre-war properties are typically built with steel frame and thin concrete slabs which can also contribute toward reverberation (an observation also made by EC Harris, 2013 in their appraisal of office conversion), all of which have cost implications and may result in the need for floating ceilings and raised floors to benefit insulation.

5.5.7 Fire Safety Measures and Means of Escape

Corroborating the observations of Barlow and Gann (1996), Kincaid (2002) and Remoy (2010), research participants indicate that fire safety measures and the location of fire escapes is an important issue in any office building change. Division between building eras was less explicit under this issue and the more recent buildings were more likely to

be compliant with contemporary building regulations as they had been designed and constructed under this regime. If change is into alternative use, pre-war buildings are likely to need fire proof enhancement, again due to their steel frame and thin concrete slab construction, while concrete buildings are inherently secure because of their construction technique.

EC Harris (2013) indicate that any major alteration in respect to this issue is likely to be a veto variable when considering intervention as it is likely to involve considerable cost. For instance, the office building form and shape and its relationship with the core design will govern the configuration and layout of residential, hotel or student accommodation. Consequently, in certain cases, inappropriate travel distances to means of escape will demand additional fire escape structures which involve major cost. Although fire engineering measures such as sprinkler systems can mitigate many of these issues.

5.5.8 Aesthetics and Identity

Building upon the work of Kincaid (2002), research participants indicated a number of additional physical variables in relation to the physical characteristics of secondary office building re-use. The first of these is building aesthetics and identity which can be directly related to end user requirements and the consideration of facade in Section 5.4.3. Again, research participants indicate that different office building eras have different issues. Section 5.4.3 indicates that a key cost driver in relation to office change is the degree of intervention in the facade. Participants indicate that pre-war office properties have the greatest pitch appeal, often in central locations, they are well known and have well ingrained and transferable identities. They are also rich in traditional features which can be helpful in any future marketing strategy. Some properties built in the 1980's and 1990's are considered positive if they are in a central location due to the appearance of high specification. However, research participants were less effusive in relation to properties built in the 1960's and 1970's.

An office agent summarised this situation succinctly,

"A lot of the brutalist and modernist architecture seen in our city centres is very much like Marmite, you either love it or you hate it, and this makes marketing to wide and diverse audiences difficult."

This is particularly the case in relation to the high value prime locations, where,

'Pavement draw' is crucial to high value potential purchasers.

The result in such situations is the demand for alterations to the building facade which is costly and not covered in the English Governments PDR legislation. Section 4.3.3 indicates that this portion of property accounts for 37% of secondary office vacancy.

5.5.9 Location, Accessibility and Amenities

The remaining three additional attributes relate to the location of the physical building. Although these attributes typically relate to the wider location, they have been included in this section because research participants argue that individual secondary office buildings cannot be considered in isolation, they are part of, and dependent upon, their wider situation. This argument stands alongside the finding in Chapter 4 in relation to the structures of local rental markets and the explication in this chapter in relation to economic viability. The issue of location will be revisited in Chapter 6 where an argument is put forward for agility that looks beyond the individual building.

First of all, in terms of physical intervention, the building site and nature of party walls in large part determines the ease and potential elasticity of change. A detached building has greater potential for horizontal extension and will receive fewer issues in terms of party wall negotiations. In addition, a secondary office building with ample expansion space will enable project contractors to go about their daily business without disrupting neighbours and nearby uses (Baird et al., 1996). These conditions are relatively rare in mature central locations where cheek by jowl development is an historical tradition. Therefore, office buildings built towards the periphery of town and city centre locations, and in out of town areas, offer greater means of access and construction site space. In relation to construction programming this puts office buildings

constructed during the 1980's and 1990's, those most likely to be built toward the periphery, at an advantage.

However, in terms of what an end user wants from a secondary office building, either in present or alternative use, research participants indicate that properties constructed in the pre-war period and between 1960 and 1980 have the greatest location attributes because they were typically built in central locations. Such locations often have well maintained and attractive public realms, have good access to public transport and relative proximity to road networks and may also have generous car parking provision. They are also in walkable distance to social amenities such as shops, gyms, nurseries and banks which reflects the increasingly ambiguous demarcation of work, home and leisure outlined in Chapter 2 and reflected in Chapter 4. There is considerable potential for an additional research avenue (using GIS) to test this assertion.

These multi-function locations are best positioned to support the flexible nature of building agility. In contrast, secondary office buildings built between 1980 and 2000 are more likely to exist in mono functional office locations, either on the periphery of town and city centre locations or in out of town office parks. These locations often have good road system connectivity. However, they were often built with the private car in mind. Consequently, these locations have less connectivity with public transport systems and social amenities and do not have good walkability. The public realm, although well maintained in terms of landscaping, is often boring and exists in close proximity to busy motorways.

Research participants indicate very little optimism in relation to mono functional locations. This finding corroborates the findings of Remoy (2010) who indicated that vacancy and potential adaptability is closely related to mono-functionality. However, Remoy (2010) found that older buildings were more likely to exist in mono functional office locations, built during the 1960's and 1980's. This is not the case in the UK, more recent office buildings are more likely to be found in these peripheral locations, while the older properties exist in central locations. This exposes a key difference between the findings in this study and Remoy's (2010) findings in the Netherlands. Remoy (2010) indicates that more recent buildings have greatest agility, however, findings in this study suggest the opposite in the UK, although, this is mitigated by the unifying issue of location and mono-functionality, which exists in both studies.

5.5.10 Summarising Eras of Construction

Table 5.2 below summarises the findings in this section, separating the respective challenges and opportunities inherent in each era of construction. In addition, Table 5.3 represents the potential degree of physical intervention needed in each office building era in respect to each physical characteristic.

Table 5.2 Physical Opportunities and Challenges

Era	Challenges	Opportunities
Pre War	<p>Poor HVAC and Network capabilities</p> <p>Poor overall building height</p> <p>Poor lift capacity</p> <p>Building could have special historical status</p> <p>High column density</p> <p>Negative acoustic separation</p>	<p>Natural lighting and ventilation</p> <p>Generous floor to ceiling heights</p> <p>Robust external fabric</p> <p>Narrow floor plates</p> <p>Mechanised M & E not deeply embedded</p> <p>Central location</p> <p>Car parking</p> <p>Pitch appeal/identity</p>
1960's - 1970's	<p>Presence of asbestos</p> <p>Early examples in the 1960's may have low floor to ceiling heights</p> <p>Deep floorplates</p> <p>Aggressive exteriors</p> <p>High grid density</p>	<p>Robust external fabric</p> <p>Central location</p> <p>Positive overall building height</p> <p>Car parking</p> <p>Positive acoustic separation</p> <p>Large quantities of tolerance in the overall construction</p>
1980's - 1990's	<p>Tightly constructed</p> <p>Large floor plates</p> <p>Deeply embedded services</p> <p>Thin structure and external skin</p> <p>Potential for poor location (mono functionality)</p> <p>Poor acoustic separation</p>	<p>Low grid density</p> <p>Accessible by car</p> <p>Car parking</p>

Table 5.3 Physical Intervention in Building Evolution

Physical characteristics	Post war	1960's - 1970's	1980's - 1990's
Size, height and depth			
Building structure			
Envelope and cladding			
Internal layout and access			
Building services			
Acoustic separation			
Fire safety measures and means of escape			
Aesthetics/identity			
Location			
Accessibility			
Amenities			

Intervention Key	
Low Intervention	
Medium Intervention	
High Intervention	

Following the findings in Chapter 4, the post-war category and 2000+ era of development was removed from the appraisal due to their negligible impact while the 1980's and 1990's categories were collapsed into one another as they generally share the same characteristics. Research participants indicate that pre-war secondary office buildings have the greatest potential agility. These buildings are more likely to have narrow floor plates, good natural light and ventilation and generous floor to ceiling heights. Building services are not deeply embedded in the building and are relatively easy to unpick and modify. These characteristics are supported by a well maintained central location, good accessibility and good access to amenities. However, the challenges inherent in these properties involve poor service specification and capacity and poor overall building heights which may be difficult to mitigate because of low structural strength and potential historical listing. This can be exacerbated by poor lift capacity, low acoustic, thermal and fire safety integrity and high column density.

At the opposite end of the spectrum are those buildings constructed between 1980 and 2000 which research participants did not view favourably. Positively these buildings have ample car park provisions due to their peripheral location and greater quantity of overall space and are easily accessible by car. These buildings are also likely to have low column density which aids building subdivision. However, buildings constructed during this era have more challenges than opportunities, including large floor plates, tight construction, deeply embedded services and poor external structures which were built to minimum cost specifications, poor acoustic separation and are more likely to be located in mono-functional locations.

In the middle of these two building eras are those buildings constructed during the 1960 and 1970's. The opportunities and challenges inherent in this construction era are relatively balanced (reflecting the Marmite observation in Section 5.4.8). These buildings may have large quantities of asbestos, large floor plates, and early examples may have low floor to ceiling heights as they were constructed before the explosion in building servicing. These problems can be exacerbated by high grid density and aggressive exteriors. However, such buildings also have large quantities of inbuilt design tolerance which aids agility. They have robust external fabrics and overall structures and have good critical mass in terms of height which assists the overall net internal/useable area. They also have good fire resistance and acoustic separation and can have ample car

parking provision. Most importantly they are likely to share the central location attribute with the pre-war properties.

This means that building surroundings are more likely to be well maintained. In addition, accessibility is likely to be positive in terms of car and public transport and the local proximity to amenities is likely to be more accommodating. One theme that runs throughout the thesis is that older buildings are more agile (Chapter 6 will take this theme forward to inform a set of agile policy recommendations). This provides an historical perspective to the findings of Agre (2005) who observes that the era of building procurement/origin affects the agility of property. Chapter 2 attests, older office buildings were built by or for owner occupiers and for a relatively lengthy term of occupation and ownership, while more recent properties have been investor led. The findings in this section suggest that it is those bespoke office buildings developed by/for owners as a place of work that have greatest agility, rather than those constructed for investment purposes.

Linking back to Section 5.4 and the consideration of the economics of agility, these properties are also likely to have robust underlying rental values due to their central location which means that economic viability in building intervention is easier to achieve as there is more opportunity to generate financial return to pay for physical intervention. In this respect those buildings constructed during the 1960's and 1970's and in the pre-war period have an advantage over those properties located in peripheral locations with weaker economic credentials. This underlines the importance of location in building agility, in terms of physical characteristics and the economics of development.

Research participants argue that the reverse side of this situation is that buildings in stranded or redundant locations will be extremely difficult to promote for re-use beyond cosmetic repositioning. This is because the available rent is not high enough to justify higher cost. Underlining the importance of location, this can even happen to relatively attractive buildings, which, if they were located in better rental areas, would be obvious candidates for renewal. A lot of local authority property is in this situation because it was not originally built for the commercial rental market. Conversely, relatively difficult buildings, for instance those built during the 1960's and 1970's, but located in buoyant rental areas, present a greater opportunity for major intervention.

The implication of this situation is that secondary office buildings located in peripheral locations will likely need financial incentives to achieve economic viability.

This same argument was identified by Bryson (1997) who indicated that vacant secondary office space in Nottingham needed Government grant to gap fund marginal development because the structures of rent outside of Central London was not sufficient to justify major physical intervention. A contemporary example of this situation is the multi award winning Toffee Factory development in Newcastle's Ouseburn Valley (described in Chapter 1) which needed an injection of European, Central and Local Government Grant totalling £6.5m. Before this intervention the building had been vacant for the best part of two decades and had gone through various stalled development proposals. This issue will be revisited in Chapter 6 where a set of public policy recommendations are developed in relation to secondary office vacancy.

The diversity of colouring in Table 5.5.10b proves that there is no ideal building era for agility. Rather, each building era has positive and negative characteristics, although it is notable that post war and 1960's and 1970's office buildings have more appeal than those constructed in the 1980's and 1990's. The broad implication of this stratification is that mature office locations with greater quantities of pre-war and 1960's and 1970's office development have greater agility. In contrast those locations with larger quantities of more recent properties, often located in mono functional locations, have less agility. When creating any typology, there is the inherent risk of over simplification and generalisation.

It is therefore important to note that there can be considerable divergence within each building era. For instance, 1960's office buildings have deeper floor plates and lower floor to ceiling heights than those constructed in the 1970's following minimum light guidelines and the advent of more prescriptive M & E requirements. While office buildings built toward the of the 1970's have less overall quality than the 1960's forbears because of minimum quality value engineering and standardisation. While buildings built towards the end of the 1990's are generally of better quality than those built in the early 1980's due to the first flowering of building sustainability and increased tenant demands.

Moreover, a major complication in this process is some of the practicalities of development, an issue exposed by Kincaid (2002). While findings suggest that older secondary office buildings have the greatest agility, they are also more likely to have inaccurate or absent building drawings which severely complicates the evaluation of re-use. This is in contrast to an opinion from a leading architect, who indicates that,

"It is not just old buildings that have crap documentation, it is a problem throughout industry, hence the importance of Building Information Modelling."

Consequently, there is often the need for a painstaking recast of building information documentation before re-use as any error can prove costly during physical intervention. Chapter 6 re-engages with the topic of building information while justifying the case for an integrated building information model (BIM) for commercial office property.

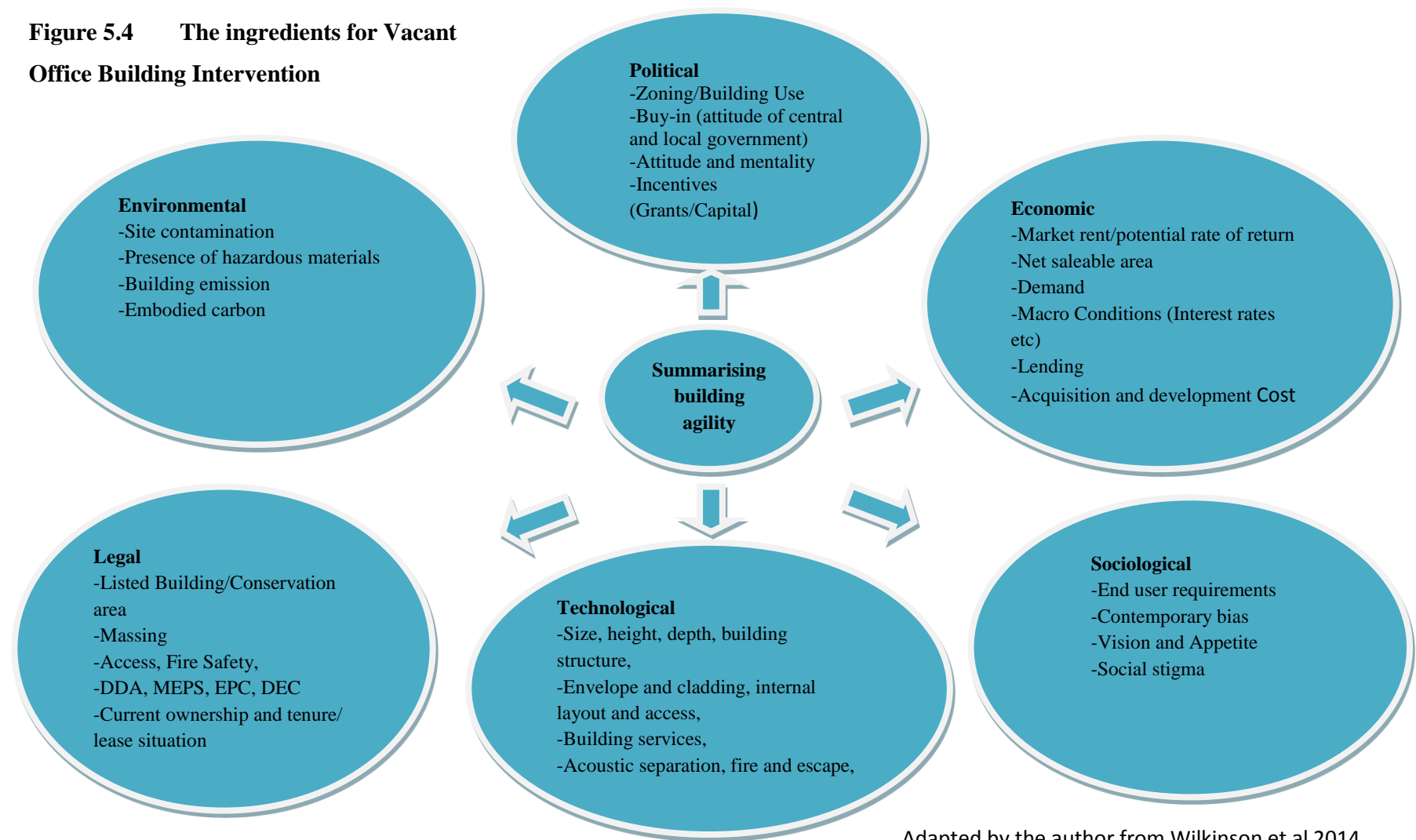
5.6 Summarising the Ingredients of Building Agility

Figure 5.6a summarises the main factors outlined in the previous sections that influence vacant office building intervention. The summary is based upon a PESTLE method which is a useful technique for scanning the contingent environment of phenomena (Allen 2001). This tool enables the researcher to demonstrate the variegated socio-institutional environment of building agility (Wilkinson et al., 2014 also provide a useful literature based summary of the macro level characteristics that influence office building intervention) by dividing the contingent environment into six segments,

1. Political
2. Economic
3. Sociological
4. Technological
5. Legal
6. Environmental

Using this strategy Figure 5.4 sets out the ingredients that should be considered in any vacant office building intervention strategy. The method also provides the opportunity to link back to the theoretical argument in Chapter 2, the empirical findings in Chapter 4 and provides a foundation for the policy recommendations in Chapter 6.

Figure 5.4 The ingredients for Vacant Office Building Intervention



Adapted by the author from Wilkinson et al 2014

5.6.1 Political Issues

Research participants indicate that the main political issues involved in the agile re-use of vacant secondary office buildings relate to central and local government. These include the attitude and buy in from local planning authorities and the availability of financial grant and tax allowances to enhance the economic viability equation. The latter point, the availability of grant and tax allowances is a fundamental requirement in marginal economic areas where expensive intervention is difficult to justify. Traditionally building use classification has been seen as the number one veto characteristic in office re-use. The inability to agree change in use stops potential re-use at project initiation (Remoy, 2010). However, this issue has been relaxed in England, after the 2013 relaxation of permitted development rights for office to housing conversion (see Chapter 6 for a detailed analysis).

Yet, this move has not been received as an untrammelled good, local authorities in England have managed to agree 17 exclusion zones prohibiting change in use (see for instance Manchester and parts of Central London) indicating that in certain locations the renewal strategy is not an option. Consequently, the exploitation and demand repositioning strategies have greater importance in these locations. Research participants indicate that before considering an intervention strategy, local authority development plan documents should be consulted in order to understand the relevant planning authorities' attitude toward the supply of employment premises in that area. In addition, research participants indicate that the presence of government grant and tax allowance is a significant boost for the renewal strategy. Therefore, before any intervention strategy is considered it is important to check whether the building under question is in a European Union Assisted Area as this defines where the Business Premises Renovation Allowance can be exploited.

5.6.2 Economic Issues

The economics of agility has already been considered in Section 5.4, however, these issues can be simply broken down into a consideration of market rent (before and after intervention), the net saleable area, the cost of intervention, the potential rate of return on any intervention and the ability to lend and secure finance for intervention. This must also be appraised against the attitude toward, and level of contingency allowed for,

potential project risk and wider macro-economic conditions, which has a bearing on the cost of finance and the general appetite for development. Last, but certainly not least, economic behaviour and demand must be considered at the micro and macro scale. This is because it is important to determine the nature of demand in contingent locations and the wider structural changes in the nature of demand which may affect the overall appetite for certain types of development.

It is also important to note that economic issues should not be considered in isolation, they are part of the wider socio-economic institutional environment. Demonstrating this issue, location (see sections 5.5.9 and 5.6.4) which is covered in the physical sections of this chapter, can also be considered in the economic sense (see Chapter 4). This is because individual locations have relative economic characteristics, reflected in market rent, which are predicated upon a set of contingent factors such as proximity to amenities, accessibility, size, prestige and building quality.

5.6.3 Sociological Issues

Research participants indicate that several sociological issues are prevalent in any consideration of secondary office building intervention, including ascertaining end user requirements (which cross over into the economic section), overcoming a bias in relation to new development and the stigma toward old buildings and the general importance of vision and appetite. Linking in to Section 5.6.2 in relation to economic demand and the delineation of the discerning user in Chapter 2 and 4, they indicate that end user requirements must be considered before any intervention. Linking back to the arguments of Lizieri (2009) in relation to derived demand in Chapter 2, this may seem unduly simplistic in its assertion. However, there was general consensus that the end user was regularly ignored in any intervention decision. In addition, there was general consensus around the issue of bias toward new development and the assumption that it is a superior product in comparison to the stigma associated with older secondary office buildings. This was particularly prevalent in relation to buildings constructed during the 1960's and 1970's. Buildings constructed during the pre-war period were perceived to have more cultural appeal which could form part of a business or alternative use brand strategy.

Finally, research participants indicate the importance of vision and appetite in relation to alternative ways of utilising the built environment. This issue is a recurrent theme throughout the thesis, highlighted in this chapter in relation to lateral thinking, in

Chapter 4 in relation to orthodox working practices and in Chapter 6 in relation to policy recommendations. Next to economic considerations, the presence of demand and the physical nature of buildings, research participants highlighted that this issue was a primary ingredient in building agility. Intuitively related to the attitude of developers, this issue has been placed in the sociological segment because research participants relate this to something wider than mere architectural design or working practices. Rather, it is associated with the need for society to subvert traditional ways of working and explore disruptive alternatives to orthodox practices.

5.6.4 Technological Issues

Technological issues fall under the rubric of the physical building and its location. Already considered in Section 5.5, the main issues, although variable for different eras of development, include the size, height and depth of the office building space. The office buildings structure, envelope and cladding and its internal layout and divisibility. In addition, access, building services and the provision of acoustic separation are important factors in any intervention strategy (Kincaid, 2002). In addition, the means of fire escape, aesthetics and image, location and accessibility should be considered when appraising potential intervention.

However, technological issues are not restricted to the building and can also be seen in the wider macro environment. For instance, the rapid changeability of ICT already evidenced in Chapter 4 has the capacity to radically alter the potential of secondary office buildings. Indeed, 4G wireless technology (and the rapidly emerging 5G wireless technology) is beginning to negate the need for disruptive servicing retrofits and the demand for large floor to ceiling heights.

Research participants indicate that the discerning user increasingly values the ability to simply plug in and work. Therefore, technological issues should not only be centred on the individual building and the ability for it to change, but the perspective should also be cognisant of the wider technology based changes in the nature of work and opportunities this presents. Chapter 6 will revisit this situation where an argument is made in favour of broad, flexible buildings which have a high degree of optionality, rather than the contemporary trend for tightly constructed and highly specified buildings reflected in Chapter 4.

5.6.5 Legal Issues

Research participants indicate that there are two major types of legal issues in relation to secondary office building agility. Firstly, building related issues, and secondly, ownership and lease related issues. The building related issues are closely related to the political segment but are included in the legal section because they are related to the legalities of the building code and planning guidance. Firstly, any alteration to a secondary office building must consider access, fire safety and the Disability Discrimination Act. Any change to a building, especially when it relates to a change in use, will need to be cognisant of the respective building code for that type of use.

In addition, any invasive intervention measure must check whether the building is Listed and/or if it is located in a Conservation Area. Depending on the nature of historic listing, both internal and external parts of buildings can be listed and must be checked over by a historic building expert. This issue is particularly prevalent in the pre-war office era segment. Although historic listing can add to the cultural appeal and brand image of a building it can also add significant cost to intervention and should therefore be factored into any economic appraisal. In addition, the relaxation of permitted development rights does not apply to Listed Buildings, so any internal or external alteration would necessitate a Listed Building Consent. Yet, there are some positive aspects to Listed Building status. They do not have to pay empty property rates nor do they need an Energy Performance Certificate which exempts them from the 2018 Minimum Energy Performance Legislation rules (MEPS). The other side to this argument is that these exemptions could remove some of the incentive to intervene in an underperforming property asset.

However, increasingly buildings constructed in the 1960's and 1970's (14 buildings constructed between 1964 and 1984 where recently added to the historic list, see Knapton 2015 and the image of Mea House in Chapter 2) are beginning to be listed as their historic value begins to be recognised. This constitutes a significant threat to the renewal strategy outlined in Section 5.2. While buildings constructed during the 1960's and 1970's have considerable design tolerance and potential optionality they also exhibit considerable image problems. This issue could necessitate considerable aesthetic alteration which may contradict the views of the local historic building officers. Intuitively, historic conservation is aligned with the normative argument in this thesis, the continued use of existing office buildings. However, there is also a certain degree of

contradiction because research participants indicate that intervention, especially under the renewal strategy, demands building alteration. Indeed, under renewal, the original use is obsolete and should be actively subverted. Therefore, it must be noted that the conservation principle at the heart of this thesis regards the embodied components of the building, rather than its historic nature.

Secondly, the current ownership and tenure/lease situation must be assessed when considering an intervention. It has already been observed by Agre (2005) that the nature of ownership is an important factor in building agility. This is because owner occupiers are more likely to take a long term view of an asset while investors prefer short-term return on investment. This reflects the perennial contradiction in commercial office property (expounded in Chapter 2) in relation to whether it is a place of work or an investment. If the latter, it is likely that the investor will be happy to observe from distance a degree of return and overall capital appreciation, rather than any type of profit maximisation strategy. Those charged with managing the assets, typically the managing agent, will be expected to carry out minimum expenditure.

In addition, it is important to consider who is doing the work, particularly if it is the tenant or the building owner (Swallow, 1997). In England, a few decades ago, it could be assumed that the first lease of an office building could last up to 25 years and a landlord could therefore expect the tenant to carry out a certain degree of remedial work (Chapter 4 indicates that many landlords still operate under this principle). However, contemporary leases are far shorter, currently around the 5-year mark, and it is therefore difficult to expect tenants to carry out any significant level of intervention beyond the minimum agreed during conveyance.

Furthermore, if a landlord or investor has taken the decision to intervene in a building, for instance through repositioning or renewal, it is important to consider the nature of tenancy. If the building is covered by a single tenancy, intervention can take place at the end of the lease relatively smoothly as the landlord will have vacant possession. However, it is common for office buildings to be sub divided and let to multiple tenants, thus necessitating some form of rationalisation and compensations strategy (or the forced eviction observed in Chapter 4). A phased programme of works could be considered in less intensive interventions strategies, such as the adding of additions under the repositioning strategy (this strategy is less likely under renewal).

5.6.6 Environmental Issues

Research participants indicate that environmental issues predominantly come in two forms, either building or environmental policy related. Firstly, older buildings are more likely to have hazardous materials present, such as asbestos, which is costly to remove. Furthermore, the surrounding site is more likely to be contaminated and may therefore necessitate significant levels of preliminary investigation and consequent remediation if the wider site is included in any intervention strategy.

Secondly, this thesis has intentionally given little regard to the issue of sustainability (other authors have already made consummate accounts, see for instance an early appraisal by Kincaid, 2002 and more recently Bullen, 2007). However, it would be churlish to ignore the issue altogether (Chapter 7 discusses this issue in relation to further research). In terms of environmental policy, the international literature sets out a compelling case for promoting agility in light of energy use and embodied carbon. In other words, promoting the continued use of secondary office buildings involves less material consumption, less transport and less pollution during construction (Bullen, 2007; Wilkinson et al., 2014). Douglas (2006) has indicated that re-use can reduce the impact of urban sprawl and promote urban intensification. In addition, as office buildings become more efficient in terms of energy consumption due to minimum energy performance standards, the embodied energy held in the bricks and mortar of buildings will become more significant and is likely to form part of future carbon foot printing and minimum energy performance standards. Indeed, one UK study found that when economic costs are high, environmental considerations can sway a landlord toward building retention instead of removal and redevelopment (Ball, 2002).

In the international literature it is these arguments that have formed the basis for the argument in favour of building re-use (Langston, 2011). Indeed, Langston (2011) indicates that continued use offers the ability to retrofit sustainability into inefficient building stock. However, although the sustainability argument is compelling, it must be stated that this argument did not figure prominently for research participants (see Chapter 7 for further discussion of this issue).

5.7 Secondary Office Building Scenarios

The next section draws the various threads of this chapter together and presents a simple set of vacant secondary office building scenarios:

- Premium scenarios
- Stranded scenarios
- Redundant scenarios

The intention is to reflect upon the contingent circumstances and various ingredients that pervade any appraisal of potential intervention and to provide an initial guide for the picking of suitable secondary stock for re-use.

5.7.1 Premium Scenarios

The premium scenario highlights those secondary office buildings that have the greatest building agility. These office buildings are imbued with the greatest blend of positive characteristics. They have the strongest local rental structures, they have physical optionality, are accessible and have good access to local amenities and cultural value. Secondary office buildings in these locations are not necessarily the best on offer in terms of physical characteristics but they have the greatest blend of assistive characteristics, mostly due to their prominent location. Echoing this point, Sir Richard Rogers (2014) recently argued that the biggest opportunity for new brownfield development in England may not be the big inner city sites, rather,

'Intelligent retrofitting and redevelopment, adapting existing buildings and working outward from high streets and neighbourhood centres - the places with best access to public transport, shops and other amenities...our urban renaissance does not need new towns, but there must be new towns in our existing cities.'

(Rogers, 2014, The Guardian, 15 July 2014)

Encouragingly, premium locations have the greatest connectivity with acute vacancy (predominantly because the assessment of acute vacancy is based upon value). This indicates that those properties that overhang local property markets most are also likely to have the inherent characteristics to aid intervention. In these locations there is always the temptation to move straight toward the renewal strategy because the values associated with alternative use almost always outstrip office use (see Chapter 4).

Therefore, these locations present a dilemma, they offer the greatest potential for re-use but also face the most resistance to change. In these scenarios local planning departments are likely to fight to protect the correct balance of employment premises in these locations (see the PDR exemption zone in Manchester). In addition, these opportunities could be relatively fleeting. Although a significant proportion of total vacant secondary office supply, acute vacancy only accounts for 316 secondary office buildings and could therefore disappear quickly. Furthermore, as new markets coalesce around these properties the opportunity for stock pickers like Urban Splash to capitalise may disappear quickly as acquisition costs increase (see Chapter 4).

5.7.2 Stranded Scenarios

Stranded locations may share many of the positive attributes discussed in the premium scenario but are missing some of the critical factors that enable viable intervention. In particular, they may have a slightly worse location with less pitch appeal and may be restricted in relation to building elasticity due to low amounts of expansion space. In addition, such buildings may exhibit less buoyant rental levels. This latter point could be due to their inferior location in relation to more lucrative areas within regional centres (see the comments in relation to Leeds in Chapter 4) or because the overall location does not exhibit the fundamental economic requirements for commercial real estate development (see the comments in relation to Cardiff in Chapter 4). In other words, although the secondary office building stock is basically sound, the local structures of rent and land value are not strong enough to justify development. Findings in Chapter 4 indicate that former local authority operational property often resides in such locations because they were never constructed with the commercial market in mind.

Research participants indicate that if any type of major intervention is going to be countenanced in these locations then some kind of government ordnance (such as grant, tax break, loan or joint venture) will be needed to fill the gap in development viability.

These findings mirror the observations of Bryson (1997) who researched the secondary commercial office market in Nottingham and found that the structures of local rent did not support major intervention and were also not attractive to the major investment funds that tend to fund prime office development. Therefore, not only are the buildings in such locations stranded, so in many ways are the associated locations. Although there is a demonstrable need for commercial office development in such locations to support business, such locations are not in a position to construct new office buildings or repurpose existing buildings. Research participants indicate that these locations could benefit from the repositioning strategy and in particular the serviced office model which is a relatively low cost intervention model for landlords and of benefit to local authorities in terms of available business floor space.

5.7.3 Redundant Scenarios

As the name suggests, redundant scenarios represent those buildings which have little opportunity for continued use in the medium to long term. Many of these buildings may have been built relatively recently but are now in negative situations. This is due to inferior building techniques, high specification designs (which have dated rapidly) and most importantly, according to research participants, location in mono functional office locations either on the periphery of town and city centres or in out of town locations. Many of these buildings were built in response to the availability of government incentive, (for instance the historic legacy of Enterprise Zones in the UK) and therefore do not have market rental levels to justify significant intervention. In addition, they are poorly served in terms of local amenities, cultural capital and public transport. Research participants indicate that this issue will only increase in prominence as leases are not renewed on more recently constructed buildings.

Chapters 2 and 4 indicate that the worlds of work, home and leisure are beginning to blur as consumers become more discerning and flexible in their demands for workspace accommodation. The mono-functionality of peripheral office locations is directly opposed to this trend and it is therefore difficult to imagine how these locations can adapt to new circumstances due to their lack of optionality. Although challenging, Chapter 7 argues that this issue presents a rich opportunity for further research.

5.8 Chapter Summary

The Chief Executive of a leading serviced office provider believes that,

"The time has come to reform the long term conventions of office investment methods. They are not relevant to the new economy. New models must be developed that drive revenue and boost value."

Although this quote is directly related to the serviced office model and the repositioning strategy, it can also be equated with the broader normative agenda set out in Chapter 1, particularly, the need to explore alternative ways of working and strategies for increasing asset value.

Like many of the central findings in this chapter, this argument is relatively straight forward and intuitively should be part of any asset strategy. However, research participants indicate that this approach is rarely followed, the secondary office vacancy stock take in Section 4.2 proves this situation and Section 4.3 suggests some potential explanations. The aim of this chapter has been to respond to this situation by setting out an alternative conceptualisation of adaptive re-use and a range of strategies that can be used to maximise an office asset's value over the building life cycle. It has appraised the major factors and contingent ingredients which influence this situation, focusing on economics and end user demands and the physical attributes of agility. It has then centred these issues in a broader PESTLE analysis that reflects the socio-economic and institutional factors that determine building agility. It then concluded by presenting a simple typology of secondary office scenarios which depicts the contingent circumstances within which such buildings may exist.

The various management techniques set out in this chapter should not be considered in a linear progression. Rather, some are temporary and some are more permanent as each building adapts, compromises and responds to the changing needs of respective occupiers. The next chapter will set out some policy recommendations in relation to how the secondary office vacancy issue can be ameliorated, how building agility may be encouraged and how office buildings could be developed in the future with increased optionality.

Chapter 6 Help the Aged: Ameliorating Secondary Office Vacancy

6.1 Introduction and Plans for the Future

The previous two chapters have exposed the nature, scale and location of secondary office vacancy and then considered the potential management actions in relation to this phenomenon. This chapter represents the third thread of research and presents a set of policy recommendations in relation to the recurrent issues of secondary office vacancy in the UK. As they are recommendations, they have not been tested in practice and therefore subsequent analysis and modelling is an opportunity for further research. The research has generated a number of findings that suggest a policy response, be it from central government, local government, those charged with setting industry standards (for example the RICS), and more generally the multitude of actors who govern and create the institutional conventions of the commercial office market. The recommendations are grouped under the moniker of urban agility which was introduced in Chapter 5 following the reassessment of the concept of adaptive re-use.

This chapter uses the concept of 'disruptive innovation' coined by Clayton Christenson in his 1997 book the Innovators Dilemma in order to insert a theoretical dimension and structure to the observations of research participants who indicated variously that disruptive change was already happening or needed to happen and how this might be influenced.

Therefore, disruptive innovation is identified as the generative mechanism that could lead to the wide spread adoption of building agility. Disruptive innovation describes the process where new products gain entry at the bottom of the market in simple applications and then persistently move up the market until they eventually displace the established products and orthodox ways of working. Research participants then indicate that this generative mechanism is then mediated by, and dependent upon, the identification of an additional four contingent factors:

1. Spatial agility and government ordinance
2. Design guidance and optionality
3. Building information and financial appraisal
4. Education and project management

These contingent factors are inherently variable and overlapping, hence, although Government policy is tackled primarily in Section 6.3, elements are also evident in accompanying sections. Similarly, there is considerable connectivity between design guidance and optionality (Section 6.4) and education and project management (Section 6.5). Of course, this chapter is predictive. This is because research participants were asked to describe what an agile office market may look like and what would need to happen for this to come to fruition. Consequently, this chapter is about setting out how orthodox ways of working could be disrupted and how urban agility could become the norm rather than the exception.

However, research participants did not conceive of an agile approach to office development in the same way. This is because findings coalesced into two mutually exclusive strategies for the potential agile future:

1. Planned Obsolescence
2. Functional Tolerance

A Head of Office Agency summarised this situation. The office market is faced with a choice,

"Do we build buildings that only last for a finite time and are therefore a perishable good or do we build buildings that last for longer but are fit for change. Currently, the norm is to do neither. Typically, buildings are constructed to last forever, in terms of their inherent physicality but not in terms of their use."

This is because there is a mis-match between the physical longevity of a building and its functional use which is a reflection of the wider mis-match between physical supply and the needs of occupier demand outlined in Chapters 2 and 4. Reflecting this situation a Fund Manager reflected that,

"Physically we construct buildings to last forever but only design for narrow use."

Somewhat unexpectedly for the researcher, several research participants indicated that it could be wise to construct new office properties with a limited shelf life conceding that office buildings are prone to accelerated rates of obsolescence and that this should be accounted for in initial design. This option involves the construction of office properties so that they only have a limited shelf life, similar to other types of commodity such as the mobile telephone or pre-fabricated housing in the built environment. Research participants indicate considerable frustration that office developers build office properties to last forever in the physical sense even when we suspect that they will be functionally obsolete relatively quickly.

In other words, while an obsolete Apple smart phone is relatively easy to dispose of (or to sell second hand where there is a demonstrable subsidiary market) underperforming office buildings once vacated leave significant negativity unless they can be successfully repurposed or renewed. Linking back to Chapter 4 and the discussion of planned obsolescence, this option argues that planned obsolescence can be positive. The historical problem has been that office building structures have been constructed to last forever. Instead, office buildings should be built in such a way that they are easily demountable and potentially reconfigurable elsewhere (linking into the deconstruction management technique outlined in Chapter 5). An Office Agent indicates that,

"A crude example would be disposable paper plates."

The added benefit of this development option is that it would appear to correlate with the short-term perspective of investment and development finance.

The second option, functional tolerance, suggests that office buildings should be built for the long term with flexible optionality and the presumption of change embedded throughout, design, construction and the building life cycle. Structural components should be built to last while internal infrastructure should be constructed in such a way that agility is promoted. A Capital Manager indicated that,

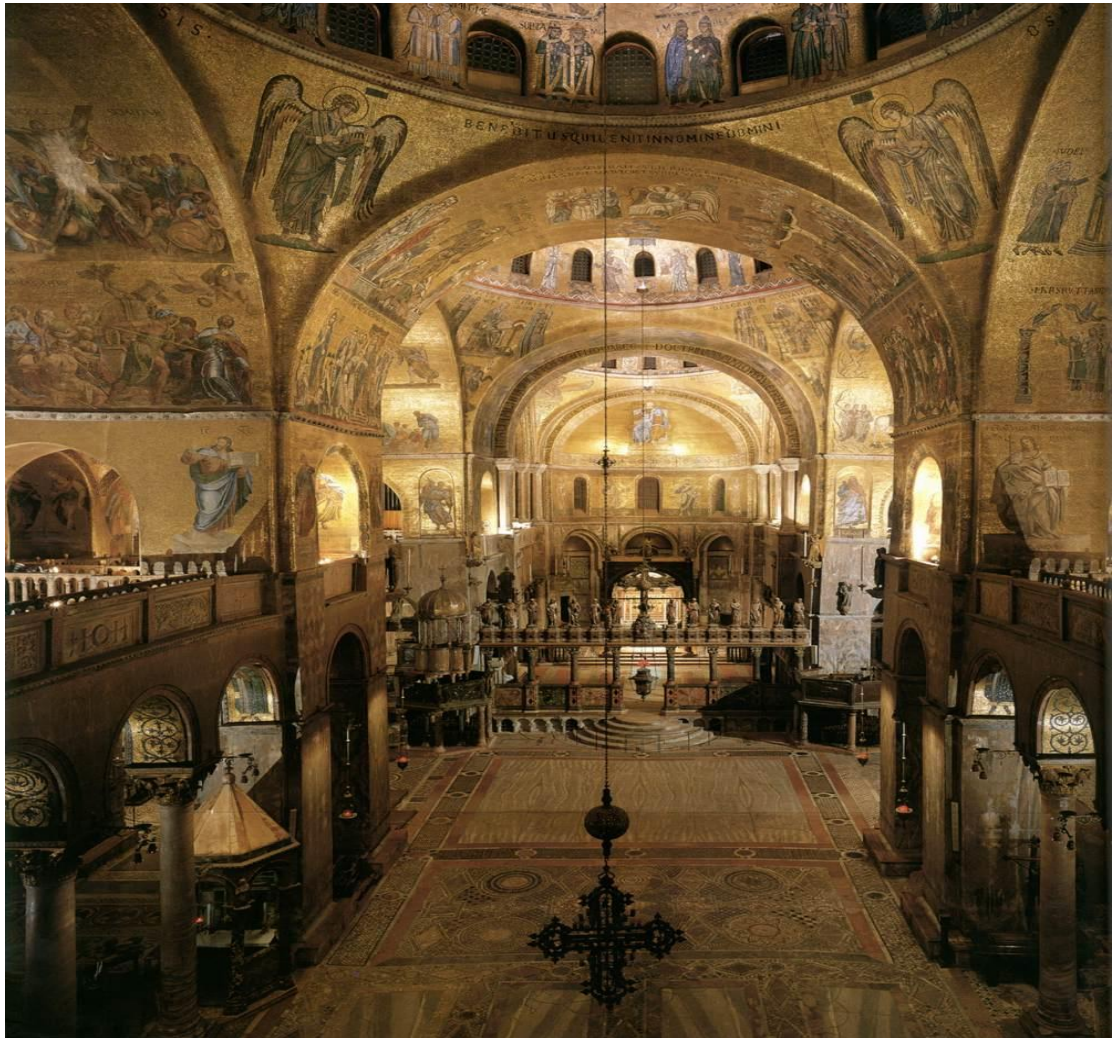
"Structural components of buildings should be built to last while internal layouts must be designed to be completely interchangeable with floor loadings enough to satisfy various building use options."

Furthermore, an Urban Designer argued that,

"Buildings should be constructed around the principles of simplicity...built to respond to change and to maximise diversity."

Linking back to the description of optionality first introduced in Chapter 2, Taleb (2007) coined the term 'optionality' in his discussion of risk in the international finance sector. Drawing on theories of environmental biology he argues that the organism with the greatest number of secondary uses will gain most from environmental randomness. Environmental randomness can be equated with the fluid nature of occupier demand in the commercial office market. Taleb (2012) argues that inflexible economic systems constructed without optionality are more susceptible to the risk of change and random events. An obvious parallel can be drawn between economic systems without optionality and office buildings which are locked into function and high specification. Such buildings are not able to adapt to change or random events, therefore just as optionality is a good hedge against risk in the global economic system, so is optionality and functional tolerance in office building construction and institutional convention. Drawing on evolutionary biology and architectural terminology the 'spandrel effect' can be used to describe the potential extension of this theme (Taleb, 2007). In architecture a spandrel originally described the triangle space between two arches that come together and intersect with the ceiling of a building, most famously in the Basilica di San Marco in Venice (see Figure 6.1 overleaf).

Figure 6.1 The Spandrels of St Marco



Source: <http://webgallery.com>

In evolutionary biology, Gould and Lewontin (1979) popularised the spandrel effect to describe secondary bi-products that were not necessarily adaptations in themselves. The analogy is that the original spandrels were not used until artists realised they could use spandrels as artistic spaces adding to the overall design and evolution of a building. The spandrel analogy is therefore a phenotype. In other words, it is an expression of a building's evolutionary design as well as the influence of environmental factors and the interaction between the two. It opens up the possibility of new dominant functions where auxiliary offshoots lead to new functions.

Indeed, an Economic Development Manager argued that,

"Ambiguity in use should be a given, the presumption of development should read that this building can be used for the following rather than this building can only be used for..."

She concluded that,

"Current planning policy and use classification is a blunt instrument – you only have to look at the SIC codes for the variety in use, and even the SIC does not account for the fluidity in use, only that there are many uses. Its fluidity and dynamism that needs to be recognised and catered for."

The consensus opinion from research participants indicate that functional tolerance is the preferred option (however, the first option cannot be discounted and is discussed in Chapter 7 as a fruitful avenue for additional research). This is because the overall consensus was that the office construction should be aligned with the dynamic customer instead of the financial industries. Indeed,

"We must alter the traditional development industry which is naturally conservative and dominated by precedent and narrow building typologies. This is typically based on historical information and what came before. Is it any wonder that properties are functionally obsolete so quickly? Overall, there is a disconnect between customers and the building, buildings are more closely aligned to the financial industries than their basic occupiers"

(Leading Developer).

Consequently, an Urban Designer indicates that we are creating a,

"Restrictive blanket of conformity which ignores the metabolism of the building and the people who work there. There needs to be a cost benefit analysis of buildings efficiency savings and actual human productivity – there needs to be

balance. There is not any consideration of people and by extension demand. Buildings are a financial instrument."

Reflecting this situation, a developer observed,

'Do we know of any other industry where the value of a product is defined by a third party?'

The implication of this situation is that the institutions of the commercial office market in the UK are,

"Continually increasing the specification of an office building, much like the bells and whistles on a car, increases the factors of potential obsolescence and things going wrong. We are creating the conditions for increased obsolescence through increased specification at exactly the same time that we should be building in optionality"

(Planning Director).

Indeed,

"The office market and its various institutions rely on standardised building designs, appraisal techniques and physical products which do not account for the end user need or the possibility of change. There is something of a bunker mentality where industry continues to churn out standardised building products with ever increasing degrees of specification which only serves to render older buildings obsolete in terms of the 'best' specification"

(Property Manager).

It therefore seems conceivable that the office market, in certain locations, is potentially constructing buildings that customers do not need. Instead, an architect argued,

"Each building needs a unique response; a formulaic response does not work...standard use no longer exists. This is why so many buildings are demolished before their time"

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Encouragingly, a Property Manager argues that pursuing functional tolerance should be vindicated because,

"Embedding this approach in office building construction will provide 'forsight' comfort. In other words, if a business goes bust with only a shell complete, a bank or lender will be comfortable that it is not left with a useless asset, rather it can be adapted for a variety of uses."

However, a Planning Manager argued that actors should be circumspect because,

"The cost of future proofing would likely be too high. Any economic appraisal model will look at building a property, making some profit and then selling after 15 years max, they would not see the point in looking any further ahead, why would they?"

A Quantity Surveyor suggested a potential solution to this situation,

"This viewpoint is reliant upon a long term perspective and the only way this will be possible is if embodied carbon is priced into development appraisals across the whole building life cycle cost."

Although embodied carbon is traditionally a secondary concern in respect to the contemporary focus on operational carbon, this could be about to change. Indeed, a leading architect commented,

"As energy consumption reduces through technological advancement, embodied carbon will become increasingly important. It already contributes 30-40% of emissions, this proportion will increase as operational carbon decreases in emphasis."

Summarising this situation, Kincaid (2002:18) hoped that

"The frequent adaptive re-use of buildings would be the norm rather than the exception requiring planning and design procedures that enable built space to be

adjusted and re-adjusted to satisfy the rapidly changing patterns of demand. The extent and rate at which the existing building stock is capable of adaptation to support changing uses and requirements will need to be increased significantly to support the challenge of accelerating economic change.'

In response, this chapter sets out policy recommendations that can be used to inform the emerging debate in relation to how, as a society, we move from a small range of exemplar agile projects to an agile orthodoxy. Optimistically, if we follow the disruptive innovation model of Christenson (1997), the existence of exemplar projects may indicate that we are well on our way already. This suggests the hope of Kincaid (2000), who argued that,

"A degree of redundancy, use ambiguity and flexibility within a permissive and dynamic regulatory system could lead to more adaptable and sustainable futures for facilities, buildings and infrastructure"

(Kincaid 2000:158).

Indeed, he reflected, that it is no longer reasonable to assume that new building stock will remain in its original use class. The argument of Kincaid (2000) powerfully captures the spirit of the normative argument in this thesis. However, Kincaid's prediction made in 2000 has not materialised, although urban agility is beginning to make in-roads (see the examples of meanwhile use and conversion into alternative use in Chapters 1 and 5) it is not the norm. The remainder of this chapter responds to this situation.

6.2 Disrupting the Orthodoxy: An Agile Approach

Research participants indicate that the primary generative mechanism for potential building agility is the creation of change momentum and ultimately a disruptive innovation. A fundamental requirement in this disruption is recognising the discerning user. Illustrating this situation, a leading developer argues that,

"The end user is often not demanding enough i.e. an architect will install traditional heating systems and under floor systems and they will not question the

reason. The client needs to stamp their authority and demand what they actually want."

However, reflecting the findings in Chapter 5, the ultimate decision to explore alternative products rests with the landlord and an assessment of economic viability and generation of investment return. Indeed, a national office agent indicated that,

"The only way landlords and associated investors and lenders will change their established way of working is when they realise that there is something in it for them which justifies the change...otherwise they will continue to eke out a rate of return as they have always done...why would they not?"

It is important to note that the automobile had been around for decades, but that it did not take off until the advent of the Model T Ford many decades later. The automobile did not immediately replace the horse and cart because it had been traditionally too expensive and unwieldy for mass market production. The associated infrastructure such as roads, an efficient supply chain, training and regulation did not exist. In some respects, this historical legacy can be compared to contemporary real estate development and agility. Long life and lose fit architectural principles were popularised in the 1960's (Kincaid, 2002) but were quickly superseded by value engineering in the 1970's and 1980's and increasingly elevated specification.

In short, the institutions of the commercial office market are not set up to construct or manage agile buildings. This links back to a point made in Section 2.2 in relation to the perennial tension between an office building as a place to work and as an investment activity. Currently, it is set up to construct immediate financial return. Only when these combined issues are ameliorated and the user is inserted into the development process, will the momentum of building and urban agility increase and turn into a disruptive innovation.

In recent decades the term 'disruptive Innovation' has entered the lexicon of business, policy and academia following its first introduction by Christensen (Christenson and Bower, 1995; Christenson, 1997). For Christensen, a disruptive innovation is something that presents a new or different product or service than that presently available in the market place (Christensen, 1997). In their study of hard-disk drives, Christenson and Bower (1995) observed that a lot of companies doing business in

conventional markets decline, breakdown and fail to retain their market dominance and enter bankruptcy. This occurred because other, mostly newer, companies offered alternative products that were often simpler, more affordable and convenient to use, especially for users and purchasers in niche markets.

In the first instance these products often underperform in comparison to prime markets and have fewer features. While these products may lack some of the highest specifications demanded by conventional practice they frequently appeal to new customers, or those who operate on the fringe, who are not content with the orthodox services and products provided by the traditional market place. Grant, Hackney and Edgar (2010) argue that disruptive innovations improve products in ways that conventional markets do not anticipate and through,

"Continual improvements and refinement, they often result in the removal of entrenched industry incumbents"

(Grant, Hackney, & Edgar, 2010:83-84).

Christenson's original research published in 1997 was enhanced in a more recent book, *The Innovators Solution* (Christenson and Raynor 2003) where the emphasis moved from disruptive technology to disruptive innovation, opening up the application of the disruptive innovation theory to broader business models. Furthermore, Oestreicher (2012) has connected disruptive innovation to path dependence which reveals the possibility of linking disruptive innovation to lock-in outlined in Chapter 2. This research indicates that one of the primary reasons that companies continue to invest in established markets, rather than potential disruptive models, is the evolutionary trajectory of such companies. In other words, these conventional companies, which have been in existence for decades (if not centuries), do not have an infinite choice of business directions - they are path dependent. This is because they are constrained by the institutions, behavioural orientations, knowledge and skills built up over time (Nelson & Winter, 1982 & Dosi, 1982). This makes it very difficult for established companies to account for disruptive innovation and goes some way to explaining the behaviour presented in Chapter 4 and the motive for the office market orthodoxy to protect its conventional position.

In other words, those established companies who serve the prime market invest aggressively and generally successfully, in the products and services required to hold on to existing customers and tenants in the traditional prime market but do not make the

necessary investments needed for the customers and requirements of the future. Bower and Christenson (1995) would see this as succumbing to one of the most popular management dogmas - stay close to your existing customers. Primary customers, and the market practices that sustain them, wield enormous power and help conduct company investment strategies. This approach is adequate in so far as it helps to provide the next product innovation or specification required by customers and tenants. However, it is inadequate in providing the products and services that don't immediately satisfy customer demands but instead appeal to niche markets. To continue at the top of their respective industries, those in charge of company strategy and investment must be able to identify the markets of the future. This is particularly relevant as Chapter 4 indicates that the traditional prime market is less attractive and discerning occupiers are increasingly looking for new products.

After all, it was only when Henry Ford demonstrated mass production techniques which drove down the cost of production that the automobile became accessible to the masses (an example in the built environment is system built housing). This chapter will argue that the manufacturing process instigated by Ford can be compared to the potential impact of BIM and other methods of information management which could serve the same purpose, providing the informational means to reduce and justify the cost of continual building re-use. The concept of 'disruptive innovation' has a lot to offer the consideration of urban agility and can be easily compared to the latter day functioning of commercial office market.

Christenson (1997) argues that many organisations, in time, end up constructing products that are too sophisticated, too expensive and indeed too complicated for the majority of market participants (reflecting the argument in Section 6.1). There are obvious parallels here with the findings in Chapter 4 and the discussion of the recurrently increasing specification of office building and planned obsolescence. Indeed, Chapter 2 indicates that the market creates a false picture of scarcity in order to perpetuate the continual creation of new floor space and 'sustaining innovations.' These products are positioned at the highest tiers of the relevant markets (the prime/super prime market in commercial office space) because this is where financial return has historically been induced. By charging the highest prices to the most demanding and advanced customers at the top end of the market, companies should in theory accomplish the largest rate of return. However, by following this strategy, companies and markets create the conditions for 'disruptive innovations' at the bottom of the market.

A disruptive innovation allows an entirely new market of consumers at the bottom of the market to access a product that had previously only been accessible to consumers with a lot of finance or ability (for instance the contemporary models of Citibase, Overbury and Bruntwood). The characteristics of a 'disruptive innovator' in the commercial market might initially include lower overall margins, smaller customer groups and leaner products and services which would not necessarily appeal to existing market producers nor the property support services who rely upon this model of production.

A disruptive innovator could very easily be a company/investor that specialises in demand repositioning or the renewal of secondary office buildings and perhaps more relevantly produces new buildings with the capacity for multiple functions. This is in contrast to the current tendency to create buildings with the highest specification. As a result of these lower tier markets creating lower gross margins, at least initially, they are not attractive to companies in the ascendancy or already ascending the market. This creates a space at the foot of the market for new disruptive competitors. In some respects, the commercial real estate market could be ripe for disruption. Research participants suggest that the following policy recommendations could aid this situation.

6.3 Spatial Agility and Government Ordinance

This section discusses the various aspects of public sector policy and incentive mechanism that affect commercial office vacancy and its potential amelioration. Focus is placed primarily upon the need for an agile spatial strategy that compliments an agile building strategy. In the first instance this section centres this theme on the Government's recent relaxation of permitted development right legislation for office to housing use in England. It then moves on to a wider discussion of public policy and ordinance nomenclature, its incoherence and how it might be realigned to assist building and urban agility.

In 2002, Kincaid argued that planning regulation tends to be based on historical economic conditions, precedent and maintaining the status quo, rather than contemporary and future conditions of economic demand. Indeed, the regulatory framework of the day may impede the ability of office buildings and, by association, the market to adapt. In England the function of buildings is governed by the 1987 Town and Country Planning (Use Classes) Order which places uses of land and buildings into various categories

known as 'Use Classes.' This order is periodically amended, but the general convention is that planning permission is needed to change from one class of use to another. This immobile view point labours awkwardly in comparison to the vigorous changeability in relation to occupier demand outlined in Chapters 2 and 4. This exposes tensions in relation to the central concerns of urban policy, in particular how Government policy and regulation can meet the challenges of how society uses land and buildings and manages the continually changing expectations of future need.

Correctly, in the authors view, Tewdwr - Jones (2012) maintains that the bedrock of planning as an activity is the attempt to insert a degree of management over the continual contention over the future use and development of land. In this sense, the Planning Use Classes Order supports this position, yet, the same order is also the subject of accusations of over regulation seen in Kincaid (2000, 2002) and Healey (2006). In order to reflect upon this conundrum this section appraises the recent deregulation of land and building use classification in England, namely the permission to convert office buildings into residential use without planning permission.

6.3.1 Permitted Development Rights

Illustrating the PDR situation, Figure 6.2 and 6.3(overleaf) depict the 28,000 square metre Delta Point building in West Croydon in its original state, as the British Telecom offices on Wellsley Road, and an artist's impression of its conversion into 404 flats under the PDR rules.

Figure 6.2 Delta Point in West Croydon



Source: Planning Resource.com

Figure 6.3 Delta Point Conversion West Croydon (Artists Impression)



Source: Constructionenquirer.com

Intuitively, this policy change appears positive, as it emphasizes fluid agility and recurrent building re-use. Two urban problems are ameliorated under this policy, the adverse effect of vacant office property and the perennial short fall in housing supply in England. In April 2013 the Coalition Government in England introduced conditional

permitted development rights for conversion of existing office buildings into residential use (part of the Town and Country Planning (General Permitted Development) (Amendment) (England) Order 2013), for an initial period of three years between May 2013 and May 2016. These changes formed part of major reforms to the national planning system following the publication of the Localism Act in 2011 and the National Planning Policy Framework in 2012.

The new planning rights are subject to conditions and limitations designed to control impact and to protect local amenity. The rights do not apply to listed buildings, conservation areas, and areas of outstanding national beauty or world heritage sites. The rights can also be withdrawn subject to Article 4 direction. Article 4 directions, commonly used in historical conservation, are not a prohibition on development. Rather, they serve to restrict permitted development rights by bringing previously 'taken for granted' building changes into the local spatial planning procedure. Permitted development rights have evolved from a general planning permission granted from Parliament in the Town and Country Planning (General Permitted Development) Order 1995, rather than local authority planning permission. In essence, permitted development rights are a national grant of planning permission which allows certain building works and changes of use, in this case between office and residential use, to be carried out without formal planning application.

However, the policy changes have drawn widespread criticism from local planning authorities amidst concern that the loss of local planning control and the reduction in potential planning gain from new developments will result in adverse consequences for the balance and supply of employment land and premises and residential property. Moreover, the regulations are not restricted to long term vacant office properties (as is the case with the Business Premises Renovation Allowance), but cover all office properties. Reaction to the recent change has ranged from congratulation, to outrage, fear, pessimism and confusion, in both public and private sectors (Wild, 2014; Geoghagen, 2013). More than 2,250 notifications for office to residential change of use were submitted to planning departments in the first six months alone, significantly more than the Government estimate of 140 applications p.a. (Wild, 2014). More than half of local planning authorities in England attempted to gain some form of exemption from rule changes (Geoghagen, 2013), while two judicial reviews were thrown out at the High Court (Royal Court of Justice 2013). There are 27 of these exemption zones in England, nearly all in the South East but there is also one in Manchester.

6.3.2 The Textures of Local Places: Agile Planning

Beauregard (2005) establishes that the shaping of office to residential re-use is reliant upon the functional interdependence of property sectors and local amenities and that such development is fundamentally local in formulation. Yet, findings suggest that the centralising ideological persuasion of Government in England has mis-shaped the potentially positive PDR policy. Indeed, research participants in England indicate that the PDR policy has entirely by-passed local contingency in favour of a crude, stripped back model of market development. Following the removal of the requirement for planning permission for office to residential conversion, planning practitioners, and the local areas that they represent, have been completely severed from the building re-use deliberation. Consequently, as one Planning Manager puts it,

"We are increasingly faced with a perspective where the market knows and grows best and is expected to work things out for itself."

Yet, the one size fits all policy does not account for spatial variation or the contingent characteristics of local real estate markets, what Beauregard (2005:2432) describes as the 'textured nature' and 'thickness' of actual real estate locations. Rather, it is an example of what the same author considers to be a 'thin' conception of real estate based on a reductionist and functionalist approach to building re-use. Research participants agreed that the PDR policy missed out on the opportunity for an agile place perspective and strategy. Indeed, a Planning Manager argued that,

"This policy could have been a massive step change if it was handled differently, but by ignoring wider place issues, any opportunity for an agile place strategy has been lost...in fact we end up with the opposite situation."

This is corroborated by two Planning Managers in different parts of the country who suggest that,

"PDR changes are a classic example of centrally defined and politically motivated planning policy that has unleashed a firestorm of conflicts between

different scales of urban planning governance and government...Central Government might as well have detonated a nuclear bomb"

And,

"There is a clear confusion between the stated Government policy of localism which you could associate with local governance and place making, and the reality of what is going on. The result is that the PDR policy has pretty much removed local planning authorities and local areas from the building re-use equation almost entirely."

A Planning Manager summarises the overall frustration with the PDR policy,

"The PDR policy is a one size fits all mess which leaves no room for locale specific market conditions, nor the scope to mediate these issues. The result is that planning authorities are using retrograde tactics to shelter from potential changes...what else can we do?"

A Planning Officer argues that this is because PDR is good in principle but it needs to be supported by increased amenities,

"Mixed use development needs a mixed use infrastructure, there is not any point in functional flexible buildings if the infrastructure does not support this."

Indeed,

"If agile reuse is going to be considered, the surrounding areas must be similarly agile. It is not just about the buildings it is about the overall urban environment."

In some respects, the PDR changes in England are a bold attempt at tackling rigid functional determinism in relation to building use. However, findings suggest that the movement toward a neo-liberal market economy approach to planning, initially in the 1980's and 1990's and increasingly since the Coalition Government came into power in 2010, does not necessarily favour the success of this policy. In England, this illustrates a

fundamental concern in relation to the agile capacity of locations. This is because planning is increasingly market led and ad-hoc, yet, planning practitioners suggest careful place management is needed to successfully plan building agility.

It is apparent that the capacity for governance and local development control, taken to mean the collaboration amongst actors in a local area and the traditional permission based planning process (Phelps and Tewdwr-Jones, 1998; Booth, 2003; Tewdwr-Jones, 2012), is entirely removed from this initiative. Findings suggest that it is this disjunction that has largely undermined the success of the PDR policy.

6.3.3 Spilling Over into the City

Any change in building use has secondary impacts and spill-over effects for nearby (often neighbouring) property interests, communities, infrastructures and eco-systems. Healey (2010:29) in her reflection upon planning in the 21st century, frames this challenge,

"A major challenge for deliberate interventions in the physical fabric of cities has been to grasp the relation between an image of urban form and the impacts of such form once created in the urban landscape. What impacts will it have? What meanings will it carry? How will it relate to the specifics of land and property relations, to people's daily life habits, business opportunities and the flow of natural systems?"

In partial response, research participants suggest that an 'agile' approach to building re-use, shares many of the challenges at the heart of managing the future trajectory of land use.

Therefore, it,

'Is partly a regulatory process, partly a strategic assessment, partly a governing framework, and partly a futures project'

(Tewdwr-Jones, 2012:4).

Research participants suggest that a degree of short, medium and long term certainty is needed in order to govern and balance the potentially transient nature of buildings. This is to relate building agility to nearby infrastructure, transport, amenities and other commercial interests in a co-ordinated manner and in order to provide developers and investors with a degree of confidence in relation to the future direction of location.

Without question the fallout in relation to PDR changes are symptomatic of the relative silence of local planning under the Coalition Government (Allmendinger and Haughton, 2009, 2010, 2011) and the ascendance of market led approaches to development. Nevertheless, the findings in this section indicate that spatial planning is still needed as a mediating process between state decree and local delivery and in order to balance the complexity of space and place. Unfortunately, as Tewdwr-Jones (2012) attests, the planning roll back in England since 2010 has made the governing of places as they are affected by external forces and policy directives, much more difficult to deal with, just at the time when spatial planning and development control is most needed.

6.3.4 Additional Ordinance

Heath (2001), Ball (2002) and Shipley et al (2006) all contend that there are advantages to be gained from targeted and coherent public policy in relation to office vacancy and its amelioration. Illustrating this situation, Heath (2001) compared vacant office policies in Toronto and London, the former exhibited a targeted policy approach and the latter a laissez-faire approach, and found that rates of renewal were higher in Toronto due to targeted planning initiatives. Furthermore, Bromley et al (2005) found that regeneration initiatives in London and Bristol docklands increased the re-use of the existing built environment.

However, Government policy in the UK is complex, not least because some of it is devolved to the Scottish and Welsh tiers of government (for instance relaxation of PDR only applies to England) which have developed their own regulations and initiatives (for instance the formulation of empty property rates is constituted differently in the devolved administrations). Consequently, on grounds of practicality this section will deal with government policy and incentive in England supplemented by some additional comments in relation to Wales and Scotland. The overriding finding from the research participants is that while the rhetoric of government policy is generally supportive toward

urban agility, its agents of change typically are not. A prominent urban designer argued that,

"Public policy is an incoherent melange."

In addition to the aforementioned permitted development right legislation there is a plethora of other government policies and ordinances that is either directly or indirectly related to vacant secondary office property and its potential amelioration. Illustrating this situation, there is the Business Premises Renovation Allowance (BPRA) (see Chapter 5), the impending Minimum Energy Performance Standards (MEPS) in 2018, the perennially unpopular Empty Property Rates (EPR) and the recent emergence of devolved Government finance and methods of urban financialisation which are commonly underpinned by commercial real estate development. The common view from research participants is that these tools exist independently from one another and often contradict each other. The proceeding section appraises this situation and then concludes with some suggestions for improvement.

6.3.5 Deciphering the Melange

As part of international efforts to reduce carbon emissions, commercial real estate, and its associated built environment, has been identified as a major contributor toward planetary warming (IPCC 2014). Consequently, in 2018, minimum energy performance standards come into effect in England and Wales and it will be illegal to let certain commercial property which is available to let without a minimum grade E Energy Performance Certificate (EPC) until their energy efficiency issues have been addressed. Research participants indicate the impending policy can be viewed in two main ways. Firstly, as a risk, after 2018 significant quantities of secondary office properties could be rendered permanently vacant because they are older and more likely to have lower energy performance asset ratings. Secondly, as an opportunity, the 2018 regulations will provoke landlords to improve their properties which will make them more lettable and therefore less likely to be under threat from vacancy.

However, research participants indicate that the reality of the situation is something of a fudge. Illegality and consequent compliance is subject to the 'golden rule' test which broadly states that the value of any works done to satisfy minimum energy

performance standards must be equal to or less than the expected energy bill savings over the lifetime of the project (Green Construction Board, 2014) or up to a maximum of seven years. This means that in certain cases, properties with an asset rating below E can still be let. This is when landlords have carried out works up to the 'golden rule' value threshold but any additional works to gain E rating would not be cost effective.

In some respects, it is positive that the golden rule test has diluted the impact of the 2018 MEPS because fewer properties will be rendered legally obsolete in the short-term. However, research participants indicate that this is not a positive development as this will provoke landlords to follow a path of least resistance and work toward minimum cost intervention. It is also important to note that minimum energy performance rules only apply to properties available for rent; owner occupiers are excluded from the legislation. Therefore, there is also no obligation for an EPC to be carried out unless or until a property is brought to the market to let.

Perhaps the least popular government policy in the UK in relation to vacant office property is Empty Property Rates (EPR). Every respondent criticised this policy arguing that it undermined property development and sent out the wrong type of message, inhibiting properties coming forward for change or even repositioning in current use. Indeed, a Fund Manager commented that,

'Empty property rates are ridiculous. They came in when Harry Hyam built Centre Point, left it empty and allowed it to appreciate in value while empty. Ever since, the rest of the market has been paying for this perceived misdemeanour. It makes no economic sense and just slows the market down.'

The disincentive that empty property rates create for developers in the form of enhanced capital liability is relatively well known as is the pursuit of avoidance strategies (see the detailed report by McCluskey and Davis 2013 on behalf of the RICS). However, research participants indicate a rarely mentioned problem in relation to local government finance. Under the recent turn toward decentralised urban finance, local authorities need to maximise their business rate income to fund public services. The result is that it is increasingly prudent for local authorities to leave commercial office buildings, especially secondary office building, entirely vacant. This is because any landlord must pay 100% empty property rates relative to the equivalent business rate multiplier (currently 0.48p) as if the building were occupied. However, if secondary buildings were let in typical

fashion, it is more likely that tenants would come under the small business rate umbrella (0.47) or benefit from some kind of rate relief. In addition, businesses in such properties are likely to exhibit a greater degree of churn (due to the precarious nature of new start up and small business activity) each time triggering a three month EPR payment exemption for the landlord. The perverse result is that secondary office buildings potentially contribute less business rate revenue when fully occupied than they do when vacant.

Furthermore, the most potent form of financial decentralisation in England is the Business Rate Retention Scheme, which replaced the previous centralised Formula Grant of funding. Methods of urban finance in England prioritize the flow of new build property development in order to create business rate growth, ignoring the latent value of existing property stock (see Muldoon-Smith and Greenhalgh, 2015). This is because any increase in property value is stripped out of the business rate model during periods of revaluation (typically every 5 years). This means that any re-intensification of existing property resources and consequent appreciation in value is not included in contemporary methods of urban finance. This removes any financial gain and consequent incentive for investment in the improvement of existing urban resources on behalf of the local authority. The result is potential risk that new property development will take place without an associated increase in the quantum of occupier demand. This opens the door for filtering and displacement of existing property occupiers into new buildings in a flight to quality. The potential consequence in both situations is overbuilding and high levels of vacancy in older secondary office buildings.

Perhaps the most potent Government tool in relation to vacant secondary office property is the Business Premises Renovation Allowance (BPRA). BPRA allows developers to write off up to 100% of their capital expenditure in relation to eligible physical project costs when converting an office building that has been vacant for more than 12 months. The incentive can only be used in assisted areas (defined by the EU and state aid regulations) and precludes housing re-use. It has been used most successfully to convert office buildings into hotels and student accommodation (especially in Newcastle upon-Tyne), however, the vast majority of respondents had never heard of the scheme. This is a disappointing finding in light of the key economic viability findings identified in Chapters 4 and 5. Overall, research participants indicate that the BPRA is relatively unknown and under exploited. Further, a Planning Manager remarked,

"BPRA would have more impact if it allowed housing conversion, which is where the real need is. This would then give the recent permitted development right rule changes an element of economic viability which is where the real barrier lies outside of London. This would have a real impact but would also open up a huge can of worms in relation to mixture of use in central business areas."

However, indicating the spill over effects of intervention, an Office Agent warns the result of this situation could be,

"A raft of obsolescent hotel buildings in the not too distant future, the same goes for student accommodation."

6.3.6 Governing Agility

Research participants indicate that Government policy needs to ameliorate inertia rather than contribute towards its manifestation. All too often the good intentions of one government intervention are dislocated from potentially complementary policies and may have spill over effects elsewhere. This issue can be illustrated by the listed building policy in England and its connection with other government instruments. Historical buildings can be protected for posterity on the national rating list, presumably a positive action in terms of cultural capital. However, these buildings are precluded from the recent PDR process which reduces their ability to move into alternative use. The result is that we are preserving historical buildings but preventing them from moving into alternative use. This is exacerbated by listed building exemption in relation to EPC and empty property rate liability which reduces the cost liability on investors and landlords. The result is that vacant office building policy largely passes over 34% of secondary office vacancy, while landlords sit back and allow their assets to appreciate in capital value.

An underlying recommendation in this thesis is that the UK Government should concentrate on building conservation, rather than preservation and perhaps place greater precedence on embodied carbon. In order to do this, listed buildings should be embedded in the Energy Performance (EPC) and Minimum Energy Performance Standards (MEPS) model. Currently there is not an obligation for a listed building to hold an Energy Performance Certificate.

The thesis has already considered the recent permitted development right rule changes for office to housing conversion in relation to the planning process. An additional recommendation is that the same policy should also be extended to alternative forms of use such as hotel, student accommodation and the provision of mixed use development. Furthermore, although permitted development changes are generally considered to be positive in relation to coping with secondary office vacancy they do not cater for building exterior or financial viability. Therefore, with care, permitted development right rule changes should be extended to account for building externalities (a key facet of agile change set out in Chapter 5) and linked into the BPRA model. However, permitted development right rule changes should also be tightened in relation to the relative performance of the building (in line with BPRA which necessitates at least one year of vacancy) and dissociated from new office buildings which are presumably still efficient in current use.

There would then be a policy and ordinance vehicle that removed planning and financial barriers to agility. This will be particularly useful outside of London where economic viability is seen as a particular barrier to agility. In order to achieve this recommendation, the Business Premises Renovation Allowance would need to be extended to include housing use (it currently precludes this opportunity) and disconnected from the EU based Assisted Area boundaries and state aid rules. Instead BPRA should be predicated upon those areas in most need of intervention and assistance in terms of economic viability (in particular the stranded and redundant scenarios set out in Chapter 5). In the short-term, a simple recommendation would be to increase publicity in relation to BPRA; research participants indicated that they had barely heard of the ordinance measure.

Linking back to the discussion in relation to business rate retention, an underlying recommendation is that the scheme should be extended to include existing commercial real estate assets. This would enable local authorities to gain benefit from investment in secondary office stock, currently there is no incentive to do so. The intention would be to mitigate the potential threat of overbuilding and displacement of existing tenants residing in secondary office properties into newer properties available at similar rental levels. This would be assisted by a greater emphasis on brown buildings, an opportunity that receives little emphasis next to the widely recognised brownfield land. Brown buildings are defined in this thesis as redundant commercial or industrial buildings which could be re-used for other purposes. In order to assist this situation, a simple recommendation in this

thesis is that empty property rate legislation should be reformulated in order to ensure that it is in the financial interest of local authorities for secondary office properties to be let rather than vacant.

Research participants indicate that a new possibility could be to create an ‘agility fund.’ Similarly, to the proposed ‘demolition fund’ in the Netherlands (a portion of the proceeds of new development is used to fund the demolition of vacant office buildings), any new development would have to contribute to a levy that could be used to alter or demolish an existing building that is either underperforming or vacant. Similar to existing section 106 and Community Infrastructure Levy (CIL) arrangements, any development would need to pay for any potential displacement effect elsewhere in order to maintain the balance and appropriate mixture of land and building premises. This proposal would potentially remove the market inertia in ‘brown buildings’ and encourage developers to consider the implications of new development upon existing office supply by harnessing and exploiting the destructive creativity at the heart of urban development. Under this system, over performing office markets, for instance in Central London and areas in the regional centres, would subsidise less buoyant stranded and redundant locations. Linking back to Chapter 4, new prime development would be expected to subsidise the re-use of older secondary properties rather than cannibalising the market and displacing existing tenants.

However, central and local government are only one part of the institutional environment within which secondary office property sits. The proceeding sections discuss some of the additional institutional arrangements which pervade secondary office property.

6.4 Design Guidance and Optionality

This section considers design guidance in relation to agile urbanism and the promotion of optionality (first outlined in Chapter 2 and discussed further in Section 6.1 and 6.2). A Head of Office Agency indicated that,

"Office buildings are constructed for relatively short time periods, typically the length of the classic long lease. If conversion into alternative use is going to be considered there will need to be considerable due diligence into the increased design life associated with these new uses."

Brand (1994) argues that designers need to look beyond furnishings, the space plan, and must instead assess the structure of office buildings and unpick the servicing arrangements in order to assess the potential for building agility. He observed that if the basic building structure is sound, with adequate dimensions and proportions and the site is assistive, then there is a good chance that the building can endure. Chapter 5 has already indicated that this situation is more complex, indeed potential building agility is a multi-faceted process with multiple interceding contingencies. However, the physicality of office buildings and the wider built environment cannot be ignored. Rather, it must be connected into the relational contingency of human behaviour (see Sections 4.1 and 4.2). It should then be designed in such a way that uncertainty and the intermittent nature of urbanity is an opportunity rather than systemic threat.

Nutt (1993) argued that in the past, building design was based on the intended use of a building which was presumed to last for some time. This attitude formed part of a demand led design brief where the expectation of change in use was rare. This was more than 20 years ago, however, the findings in Chapter 4 indicate that this attitude is still prevalent. In order to subvert this situation, research participants indicate the need for a design and information guide that could be used by all sectors of the market to inform urban agility. Whilst it is beyond the bounds of this thesis to expound such a guide (it is an opportunity for future study outlined in Chapter 7) a simple design and delivery guideline for building agility (potentially linked to BIM) would assist the adoption of agile design principles. The guide could include optimum building dimensions, floor loadings and tolerances for different uses, location of mechanical and engineering services, structural design considerations and configuration, locational demands, divisibility and extendibility.

Considerable consensus focused on the traditional 18th and 19th century Georgian terrace as an analogy for appropriate design principles for agile office buildings. Historically Georgian terraces have been able to accommodate various uses ranging between residential, school, hospital and office. These buildings have,

"Good light, modular design and relatively big flexible spaces. It is a question of how the room could be used rather than what it is for"

(Urban Designer).

The greatest indication of success in relation to these buildings is that they are still being used today, hundreds of years after initial construction.

In accordance with the arguments of Kincaid at the turn of the century, research participants indicate that 'long life-loose fit' principles (briefly popular in the 1960's), should form the basis for the majority of new design briefs. Functional tolerance, optionality and a degree of use ambiguity should be built into and assumed for each new office building as part of the planning approval process. In addition, the geometry, fabric and structure of an office building should be agile, removing the need to completely reinvent a building during re-use. An underlying recommendation from research participants is that new planning permissions should be conditional upon demonstration that a range of future use scenarios can be accommodated. This should apply to any major intervention and new building permission.

Furthermore, linking back to Section 6.3 these principles will need to be aggregated to,

'The totality of towns and cities. Anything less is bound to fail the stringencies of sustainability'

(Kincaid, 2000:160).

In addition, research participants indicate that these principles should be extended to the office construction supply chain and construction process. A Property Manager illustrates this situation,

"There is wide spread market inertia and supply chain inflexibility. The length of time it takes to build or adapt an office in a city centre location is incredibly disruptive. We need to investigate new ways of working such as modular construction techniques, generic construction techniques and off site construction techniques."

The same research participant goes on to argue that,

"Industry in the UK has an old fashioned way of doing things and does not like to change. Buildings should not be constructed on site; they should be fitted. There

is not any supply chain for standardised components; different sectors work within their own functional specificity. The building should be seen as dynamic product, rather than static object. In response the supply chain of building products should start to emphasise modular/generic components which can be easily interchanged to facilitate flexible re-use."

This is similar to the recommendations of Remoy (2010) in the Netherlands who recommended focus on 'industrial, flexible and demountable (IFB) buildings. However, Chapters 4 and 5 has already indicated that instead of generic interchangeability the market is focusing on increased specification.

In time these principles could be used to inform a professional guidance note (for instance from the RICS) which would be based upon the belief that initial design principles can affect agile change later on in the building life cycle. Reflecting this situation, Wilkinson et al (2014) have outlined some principles for a star rating system for 'adaptivity' based on sustainability. Research participants indicate that the Royal Institution of Chartered Surveyors (RICS) and the Building Research Establishment (BRE) are considered to be key conduits for improving building agility, referencing the Ska fit out rating and Breeam design rating tools as exemplars. However, this process is not straight forward. An Investment Agent indicates that,

'The current Ska rating only applies to internal fit out of office and retail uses, while Breeam only applies to new construction. This should be expanded or complemented by a similar rating and guidance note for continual use.'

A key recommendation in this thesis is that a similar rating tool should be developed for building agility which combines the best elements of the Breeam and Ska rating tools. However, it is not practical to assume that the assessment of agility should go through the rigour of a Breeam type assessment. This is for two reasons, firstly, a Breeam assessment is rigorous and time consuming. Building agility presumes frequent building change in the face of uncertainty. It is therefore not practical to expect a Breeam type assessment during each change. Secondly, Breeam is rigorous in terms of environmental

specification and in some respects this is the anti-thesis of building agility which negates over specification.

More positively, the Ska rating tool is relatively light touch and flexible, indeed it can be downloaded from the RICS website for informal self-assessment. Illustrating this situation, an Investment Manager indicated that,

"What is good in Ska is the degree of informality associated with the assessment. In order to get proper accreditation, you need to pay for assessment. However, the model is free to use and can be informally used by stakeholders."

However, this tool only relates to internal fit out. Following the findings in Chapters 4 and 5 it is clear that critical factors in viable renewal strategies are building fabric and the wider urban setting. A more appropriate situation would therefore be for an assessment model similar in flexibility to the Ska rating model that included all of the elements of the office building outlined in Chapters 4 and 5. Most importantly this would include the external structure and location. Ideally, the system will have the inherent flexibility to be used during initial design and during recurrent building interventions. In addition, Ska rating shares some of the elevated specification issues outlined in relation to Breeam which does not cohere with the principles of building agility. Instead this thesis advocates an approach that assesses the broad principles of agility rather than the specifications of functionality. According to an Office Agent the implications of the current situation is that,

"It is more likely that the Ska rating will be used in prime accommodation and top end secondary where rental levels or subsidy exist."

This was corroborated by an Investment Agent who argued that,

"The sentiment of Ska is good but in many instances its prescriptive specification is not viable in most secondary properties."

This is because,

"The Gold Ska rating needs a certain level of imagination and locational fundamentals, certain buildings just cannot pay back the level of investment needed to achieve this rating"

(Head of Office Agency).

This issue clearly rules out significant quantities of secondary office properties from the Ska model. Linking back to the arguments in Chapter 2 and the findings in Chapter 4, this model is reflective of the bias toward the prime office market and premium locations. It is also important to note that the Ska rating presumes a certain division between the landlord and tenant which also runs contrary to the principles of agility. This is because the Ska rating does not account for the base building, the implication is that this is the landlord's responsibility, while the fit out is the tenant's obligation, reflective of the traditional FRI lease and Triple Net. Chapters 2 and 4 have already indicated that the discerning user is no longer willing to accept the burden of office building improvement and that outside of Central London (and the regional cores) they are increasingly demanding a flexible alternative. Therefore, an agile design code should advocate the landlord and tenant working in partnership (with the onus on the landlord), in order to pro-actively manage the response to uncertainty. RICS Ska estimate that a commercial office building could go through 30-40 fits outs during its economic life cycle. However, in the future it seems more likely that a commercial office building could go through just as many agile re-use procedures.

6.5 Building Information Modelling, Financial Appraisal and the Construction Eco System

Research participants highlighted the importance of information and the need for a new long term method of development appraisal and property valuation. Traditionally office buildings have been seen as a long term investment but are traded frequently. Typically, buildings are only held for 1-10 years, an investment profile that does not lend itself to the long term ideal of urban agility. There is consensus in findings that one of the key factors in secondary office vacancy and the key barrier to agile practices is the tension between the short-term development motives of finance, investment and the developer

and the longer term perspective of building agility. Indeed, a Fund Manager commented that,

"Standard development appraisal often does not look beyond the first lease event or initial ten years of building life. Buildings are often sold on and traded before they are even occupied. The potential re-use of buildings is not part of market behaviour as the standard models of property development do not typically look that far into the future."

Under this perspective, landlords and investors,

"Do not hold buildings for long enough to justify agility. Typical investors only hold buildings for 1-10 years. Although the property industry is geared toward long term investment gain, individual buildings are typically short terms assets within this equation."

(Financial Manager).

Indeed, an Architect commented,

"We need to move beyond the numbers argument. We need to prioritise the less tangible aspects such as workplace productivity, health and happiness. Banks are not very good at this – their spreadsheets need to be altered."

However, the same architect lamented that,

"Banks more often than not set the agenda for development and this can be restrictive as it is defined by the elimination of risk which all too often stymies creativity."

In large part, the findings in relation to these comments link back to the argument outlined in Chapter 2 and the observations in Chapter 4, that market institutions are biased in favour of new build development and short-term rate of return. Considerable consensus coalesced around the potential for a new financial appraisal instrument which

utilised Building Information Modelling. This was because research participants indicated that the only way landlords and investors would countenance a long term agile perspective was if it demonstrated a return on investment. Furthermore, the only way this could possibly happen is if each building intervention is meticulously managed in order to drive down cost (see Chapter 5).

Reflecting this situation, a leading developer remarked that,

"We need to create a new development appraisal model, potentially using BIM, to plan the practicalities and cost of recurrent intervention in advance. This has to happen because of the dynamic nature of demand."

Furthermore, an Investment Agent remarked that,

"Pursuing this approach could avoid much of the tax involved in sales and development and the cost and time associated with preliminary investigations and negotiation in new development."

Reinforcing this claim, a Property Manager argues that,

"The traditional valuation and development appraisal methodologies need to be altered. Inefficiency in the built environment is in many ways a consequence of short term valuation procedures."

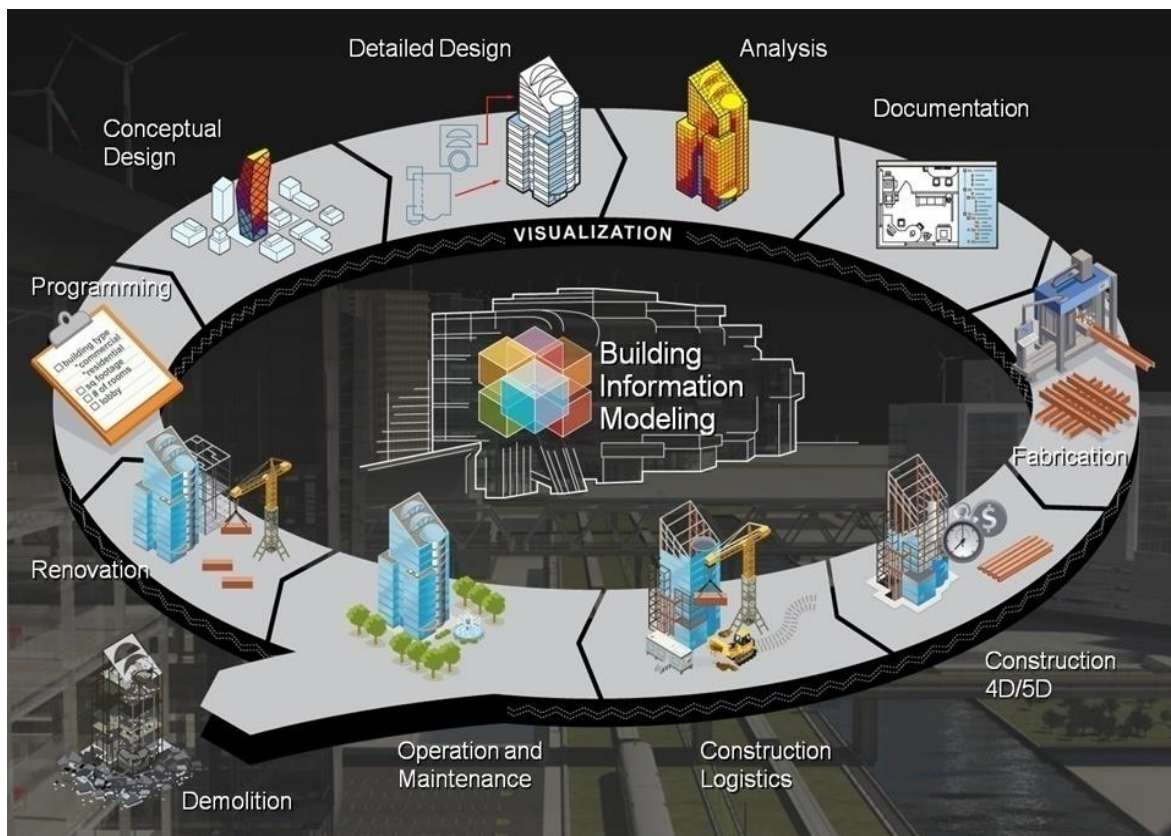
An important requirement in this endeavour is bridging the information lost in each re-let and building intervention (removing the need for repeated building surveys and reappraisals). Chapter 5 has already indicated that in order to achieve agility a certain degree of redundancy/functional tolerance should be built into office buildings. However, this recommendation runs contrary to,

"Short term contemporary development appraisal models and construction which operate on minimum cost and adequate provision"

(Property Manager).

It therefore seems safe to assume that commercial office buildings will continue to be traded in the short-term. However, a BIM model could overcome this problem and be handed down through each building iteration, potentially forming part of the conveyance/sale particulars in the same way that energy performance information is now enshrined in residential and business property conveyance. In this way the design and construction team will hand on their knowledge to the building owner and tenant. Each new interest can then add and reference back to the original building information file over the building life cycle. At the heart of this model is the use of information to unify building design, construction and surveying with development economics and property valuation. This is in response to research participants who indicate that the various pursuits operate in isolation. Figure 6.4 provides a visual representation of how BIM can be used through the building life cycle

Figure 6.4 Agile BIM



Source: Spatial.IQ.BLOG

A Property Manager argued that BIM and the use of information in the broadest sense will be crucial in driving any agile building future.

"BIM will be particularly important in establishing market principles, driving down costs and directing efficient decision making. There is potential to build an organic parametric model of agile projects to benchmark against."

The building information baseline will grow in integrity as each new building is added to the parametric model. The common characteristics that emerge can then be applied to the design guideline outlined in Section 6.4 substantiating the initial sizes, layout, tolerances, loadings and specifications with live project information.

Encouragingly, in May 2011 the UK Government called for the adoption of BIM on all new centrally procured government projects after 2016. However, a greater challenge is expanding this project to all new construction and then retrospectively adding it to existing building stock (an underlying recommendation is for the wider adoption of BIM in the management of existing building stock). In theory an agile BIM model could hold parametric information on the agile potential of each building type. When any intervention measure is considered the BIM file can be consulted and used to appraise the various future potentials of the building. This will manage the inherent variability in commercial office stock which is exponentially more variable than residential property.

In addition, BIM can also feed into the previous discussion in relation to the wider office building construction process and supply chain. This is because BIM can be used to sequence building intervention into project management systems and construction programmes. All of the existing building information can be leveraged in order to plan a project in the most efficient manner. These programmes can then be fed into corresponding spatial information to reveal logistical problems or inefficiencies and to support on site activity and intervention planning. Exposing problems in a virtual model rather than amidst a live project can significantly mitigate risk, drive down cost, avoid disruption and reduce programme length.

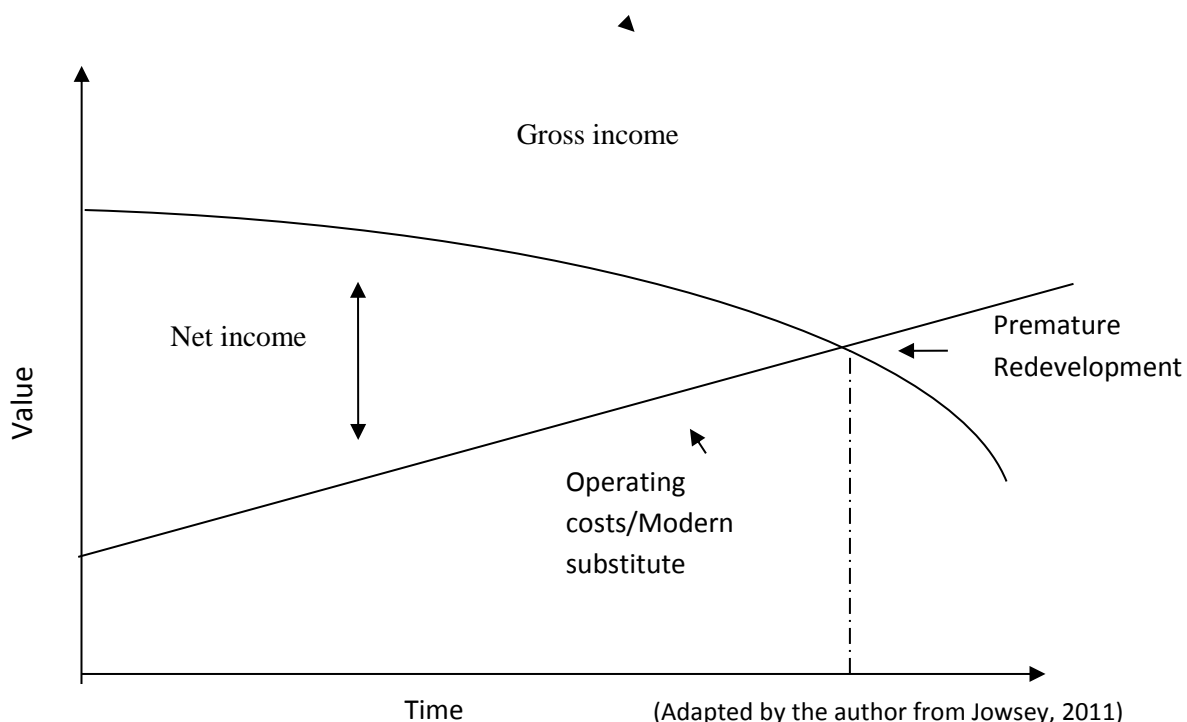
Reflecting this situation, a Property Advisor argued that,

"It is not necessarily a problem of technology and viability, rather it is about holistic communication, i.e. getting the whole construction supply chain to sign

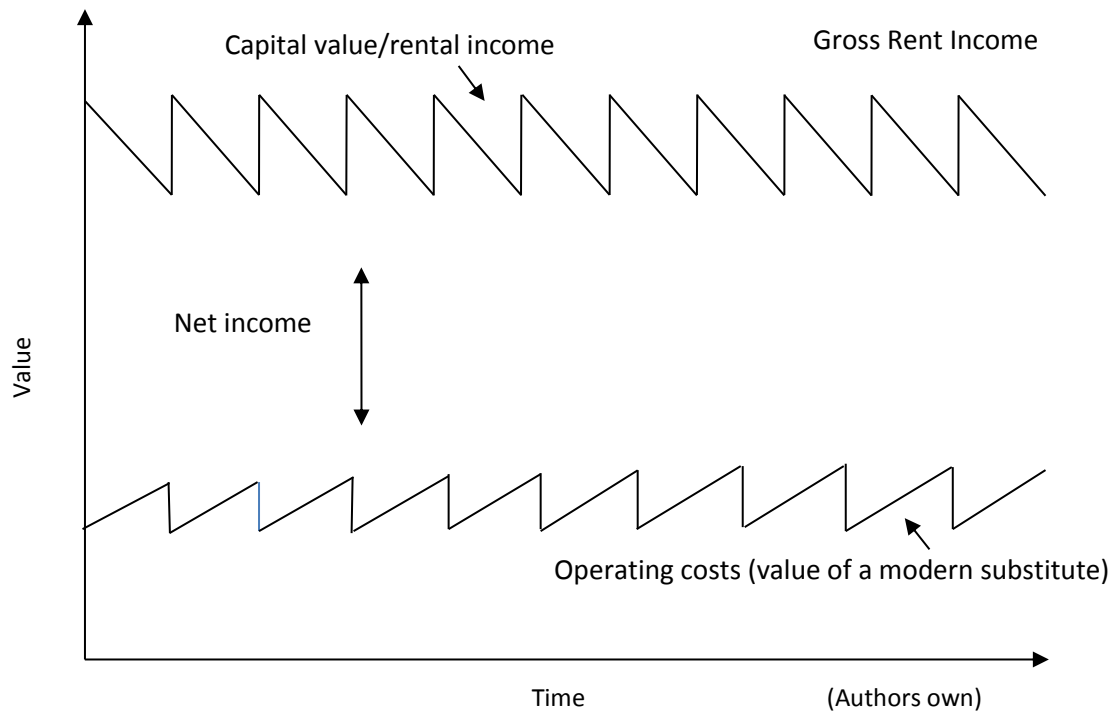
up to and sing the same tune. BIM can help drive down cost in this regard and act as a universal information device."

Therefore, not only does information, or lack thereof, play a part in conveyance and initial development appraisal (see Chapters 2, 5 and 5). The use of BIM demonstrates that it is also a fundamental part of the long-term economics of development and building management. The remainder of this section reflects upon the challenge of uniting these two facets of real estate economics, initial valuation and the economics of future development (in other words value extraction and value creation). This is in order to move from the traditional method of valuation appraisal that sees an early peak in return, followed by relatively quick depreciation in capital value and rent and then a long tail of low value into perpetuity. Figure 6.5 illustrates this situation. After the initial injection of development capital, rent decline and operating costs increase in subsequent years, if no further capital injections are made. Ultimately, costs exceed returns, raising questions about the building's financial viability.

Figure 6.5 Traditional Model of Appraisal



Toward a financial model that follows a 'saw tooth' trajectory across the building life cycle in order to prevent premature redevelopment and to optimise value (see Figure 6.6 below).

Figure 6.6 Saw Tooth Model

The saw tooth model represents an initial peak in capital value and rent, followed by depreciation but then after each intervention in the building life course, a revival in capital value and potential rent takes place. At the same time, operating costs (and the value of a potential modern substitute) decline with each new injection of capital before a gradual increase before the next building intervention.

Building life cycle theory has received quite a bit of attention in recent decades (introduced in Chapter 5) as an analytical tool for considering and promoting a longer term perspective. This is useful, however this study promotes an alternative reading of the building cycle which combines the physical life cycle with the investment life cycle. It is when the economics of building intervention is fed into the physical building life cycle that it turns into a saw tooth, rather than idealised cycle. A BIM based appraisal and management model will be used to time each period of intervention because acting too early will diminish the rate of return, and acting too late will be too costly (compound loss explicated in Section 4.3 can be used to evidence the depreciating rent and holding cost liability). Langston (2011) in Australasia makes a similar point and uses an analogue method to discount the physical life of buildings to estimate the optimum intervention point. A Property Manager indicated that,

"The new model needs to be more iterative and dynamic - saw tooth. It needs to create a forward use strategy which fits in with financial planning, in terms of initial investment but also cyclical and planned investment."

The saw tooth model is also reflective of Remoy's (2010) distinction between direct and indirect yield. Direct yield is associated with immediate return on investment and can be equated with the classical method of office building valuation and development appraisal. In contrast indirect yield is associated with future value and value creation.

6.6 Education, Project Management and Mind-set

This section concerns the requirement for effective project management, education and appetite/vision in relation to building agility, all three of which are linked according to research participants. Illustrating this situation, a leading developer remarked,

"Overall there is a lack of creativity and imagination – developers, designers, planners and investors exist in a vacuum/science of compliance rather than creativity."

Furthermore, the same research participant argued that,

"Agility is less of a problem for designers/architects who often respond well to the challenge of agility. It is more of a problem for the institutions of the market which define the dominant way of working...which designers then conform to."

There was notable consensus around the less tangible facets of development such as vision, creativity, appetite and the institutional norms of real estate development.

"Office buildings should be designed with a specific identity, this demands vision...they should not be defined by a spreadsheet and least/adequate cost model approach...they must be user focused."

However, a Property Manager commented that,

"Having the right attitude and skills set in the market place is important. This is not there at the moment. The wrong mind-set is evident and there is a skills gap."

Furthermore, the same respondent argued that,

"There is a lack of top drawer skills and experience in relation to regular building re-use across all sectors of the built environment."

Research participants indicate that this is an important deficit because the regular re-use of buildings requires the respective professional disciplines to work cohesively.

However,

"The respective pursuits of valuation, building and quantity surveying rarely operate in tandem, neither in practice or initial education. Typically, you choose an area of specialisation, learn it and then retain it throughout your career"

(Leading Developer).

This issue raises a considerable problem for agile building intervention. For instance, under the renewal strategy outlined in Chapter 5 there can be considerable reliance on explicit preliminary valuation at project initiation and the need for stringent cost control throughout the project as progressive architectural instructions mount up. During this process there is considerable risk that the actual cost of the project will diverge from the original valuation. This demonstrates the essential need, and consequent training demand, for specifically trained quantity surveying support in relation to building agility. This skill set must work in tandem with the equally important need for retrospective building surveying at project initiation and throughout the works programme. This is important because research participants indicate that re-use projects typically exist on the margins of viability and therefore necessitate meticulous cost management throughout the intervention programme.

This echoes the findings of Kincaid (2000, 2002) who revealed the divergence in perspective and preferences between the respective professions and interests involved in building re-use and the consequent importance of coherent project management and

communication. Understanding where inconsistent preferences reside is critical to the development of solutions and communication channels between project actors in order to improve the quality of decision making in building re-use. Specifically, Kincaid, (2002:16) warns that,

'This kind of information is a clear warning of latent problems within project coalitions and points to the need to guard against isolated decision-making by members of project teams.'

Indeed, research participants recommend that the appointment of a 'total envelope' developer/contractor will aid the cohesive project management of design, costing, procurement and production process and reduce project risk. Reflecting this situation, a leading developer with experience in building re-use argued that,

"Conversion is not only a physical activity, it is a holistic process founded upon economics, technology and vision. It should therefore be delivered and taught in an integrated manner."

This is because of the issue of risk.

"Any re-use project, will by definition, carry higher risk than a new development because the nature of the existing building will be relatively unknown. Unforeseen problems after works have commenced which result in extra expenditure and programme risk will be a serious mistake."

This leads to the final point in this section, the importance of education. Research participants indicate that subversion of institutional norm and orthodox practices must begin with education. Illustrating this issue, a Property Advisor argued that,

"Education is the key to changing people's mind-sets. What we are taught at University influences our actions throughout our career. I was not taught about agile re-use. I was taught how to value a building and follow price signals."

As new graduates and apprentices enter the work stream they will bring with them new ideas and perspectives which will begin to lay the groundwork for the destructive innovation outlined in Section 6.2.

6.7 Chapter Summary

This chapter has outlined some policy recommendation for an agile building future. The researcher does not contend that the conditions outlined by research participants in this chapter are exhaustive, or that it tells the entire story of potential building agility. However, he does contend that the observations illustrate some of the issues that could assist first of all recognising the incidence of secondary office vacancy and then inform the emergence of agile building use. Primarily, research participants indicate that a disruptive innovation will need to take place to displace orthodox products, working practices and institutions. However, this can only occur if several cross cutting contingent circumstance take place. First, an agile building strategy necessitates a similarly agile spatial strategy and assistive government policy and ordinance agenda. Second, there needs to be an appropriate level of design guidance based on optionality and functional tolerance. This could feed into a system of office rating which fulfils a similar role to that already established under the Breeam and Ska systems.

Third, building on the recent emergence of building information modelling (BIM) an office building information model should be used to integrate a longer term financial appraisal and valuation model based on the physical and economic building lifecycle. Fourth, is the issue of education, project management and mind-set. Research participants indicate that effective project management amongst all of the respective built environment pursuits is crucial in successful agile management strategies. Consequently, initial education based on a holistic model of surveying is an important part of subverting the orthodoxy and silo mentality imbued in much of commercial real estate development and practice.

The next chapter concludes the thesis by reviewing the aims and objectives of the research and draws the main findings together under the three primary research questions. It then ends by outlining some research limitations and opportunities for further research.

Chapter 7 Conclusion

7.1 Chapter Introduction

This chapter draws the thesis to a close and concentrates on the significant findings from the three phases of research. The majority of these findings are drawn from Phases 2 and Phase 3 as Phase 1 involved the initial exploration of literature, and theoretical re-description. However, the intention throughout the research has been for the empirical findings in Phase 2 and 3 to recursively feed backward and forward into the theoretical argument initially set out in Phase 1. The idea being that the initial theoretical argument will be over-lain and enriched throughout enquiry as the various causal circumstances in each thread of research are drawn to the surface. The findings and conclusions are grouped under the three underlying research questions that guide and structure the empirical chapters in this thesis. These three research questions correspond directly to the three threads of research outlined in Chapters 1 and 2. Inevitably there is a certain amount of crossover because findings and conclusions have been drawn out of a process of retroductive triangulation involving the three phases and threads of research. The chapter concludes with some research limitations, followed by an afterword and some opportunities for further research.

7.2 Aims and Objectives

This thesis has fulfilled three main aims,

1. To reveal the nature, scale and location of secondary commercial office vacancy in the UK.
2. To comprehend how secondary commercial office vacancy can be managed and exploited in the UK.
3. To better understand how the incidence of secondary commercial office vacancy could be ameliorated in the future

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and met six research objectives,

1. To develop a theoretical context for secondary commercial office vacancy.
2. To explore the resources that are currently available to understand secondary commercial office vacancy.
3. To expose the characteristics of secondary commercial office vacancy.
4. To explain the causes of secondary office vacancy
5. To evaluate perceptions in relation to commercial secondary office vacancy and its potential management and amelioration.
6. To determine the opportunities and challenges that influence the re-use of secondary commercial office property.
7. To make recommendations that will influence continual re-use of secondary office properties

7.3 Revisiting the Research Questions and the Underlying Research Threads

The proceeding section revisits the research questions set out in Chapter 1. The underlying research questions and the complementary three threads of research form the analytical spine of this thesis. They initially emerged from the exploration of literature in Chapter 2, then defined the structuration of the empirical findings (Chapters 4, 5 and 6) and are now used to draw out and bring together the major findings that have emerged from the research process.

7.3.1 What is the Nature, Scale and Location of Secondary Commercial Office Vacancy

This thread of research addresses the deficiency in knowledge in relation to the nature, scale and location of secondary office vacancy. Building on the explication of the various lock-ins set out in Chapter 2, the research first of all considered what the term 'secondary' actually means. Findings suggest that it is a slippery term which means different things to different market actors in different locations at different times. A lot of the time it is defined in relation to its deficiencies, in relation to its prime counterparts, to the detriment of its own unique characteristics. This is then exacerbated by a general lack of market knowledge in relation to secondary property (initially outlined in Chapter 2)

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which feeds into an availability heuristic (a biased reliance on information that is already available, typically related to the prime market). The consequence is that office market actors run the risk of conflating a lack of understanding in relation to secondary office property with an issue of non-existence. Consequently, the 'secondary' sobriquet is used to describe all of the secondary office market which over simplifies and disguises the underlying situation.

In order to fill this deficit in knowledge, research participants indicated that secondary office vacancy is cyclical and colloquial. Furthermore, it can be invisible, evidenced in the exposition of grey space. A key point of consensus was that secondary office buildings were often basically sound but because of the cost of intervention building agility was constrained because of the high upfront cost of the intervention which could not be recovered through future rent. Research participants defined secondary office property as,

'Those properties that are not new and which make up the bulk of stratified commercial office supply. They are often difficult to identify due to lack of information and may be disguised by orthodox working practices. Such properties may suffer from one or more kinds of depreciation and obsolescence but could also be sound in basic structure. Its incidence can fluctuate with the economic cycle and exhibit significant periods of void due to the churn of tenants, while its characteristics and potential viability can be influenced by locational contingency'

(Authors own).

Responding to Lausberg's (2008) explication of a deficit in relation to sub-optimal vacancy, it was then necessary to draw a distinction between those vacant secondary office properties that were still fit for office use and those that are no longer viable in their current use. This helped form the basis for further enquiry under the second research thread which assessed the various secondary office intervention measures. Academic literature defines the latter as structural vacancy and typically equates it with the length of vacancy (see Remoy, 2010). However, research participants in this study indicate that structural vacancy is a little known term in the UK. Furthermore, they did not equate it with the micro-temporal nature of vacancy, prioritising a general concept of economic

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viability underpinned by the contingent circumstances of location instead. It was therefore necessary to provide an alternative definition that was relevant to research participants in the UK. Therefore, in the UK, structural vacancy relates to those office properties,

'That no longer have a relationship with occupier demand in their present class of use, but may, depending on circumstance, have a future in an alternative use'

(Authors own).

The picture of uncertainty in relation to secondary office vacancy provoked the researcher to set out on the challenge of filling this void and appraising its actual characteristics in the UK. This effort involved the creation and analysis of the first appraisal of the UK office market outside of Central London and the first that has explicitly focused on secondary office property. This part of the research justifies the focus of enquiry because it provided proof that the secondary office phenomena exists beyond mere anecdote.

Key findings indicate that at least 18% of commercial office stock is vacant in the sample area and that there is an asymmetry between prime and secondary office property. Secondary office property exists in abundance (in terms of floorspace, lost rent and holding cost) representing 90% of total vacancy while prime offices are in short supply only representing 10% of total vacancy. An underlying suspicion in this study is that the rate of vacancy could be far higher when the incidence of empty property rate avoidance (see Chapter 1 and Section 4.3) and the incidence of grey space (see Section 4.2.4) is also added into the vacancy equation. Grey space is believed to account for 20% of total stock while the true extent of empty property rate avoidance is difficult to estimate. The consequence is that the real rate of vacancy could be closer to 50% of total stock in some locations. At this point this is only conjecture and has not been empirically substantiated in any way. However, this suggests an enticing opportunity for further study (outlined in the proceeding section) in relation to the real rate of inefficiency in the commercial real estate market.

Deploying the eras of office construction outlined in Chapter 2, findings indicate that office buildings constructed during the pre-war period and between 1960 and 1980 are most likely to be vacant. This is mediated by the contingent circumstances of each

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location. For instance, the new towns, due to their emergence in the post war period, do not have any pre-war properties, while older locations like Liverpool and Glasgow have an abundance of pre-war properties. Finally, providing a possible basis for strategic intervention, acute vacancy indicates that a minority of secondary office properties overhang the UK office market more than others while compound loss estimates the cost of secondary office vacancy in relation to lost rent and holding cost.

This stage of analysis was then followed by a causal analysis of secondary office vacancy in order to expose the underlying conditions of the secondary office vacancy phenomenon. Research participants indicate that the primary generative mechanism in the incidence of secondary office vacancy is the changing nature of demand and the emergence of the discerning user. Increasingly, potential office tenants want less space, demand more from this space and want it provided on their own terms in a regular fashion. This manifestation is then undercut and criss-crossed with six additional conditional circumstances. These conditions include the physical design of buildings, government policy, the incidence of culpable obsolescence, secondary institutions and education, the structures of local rental markets and planned obsolescence and over specification.

Findings suggest that over time complex systems, like the respective commercial office markets in the UK, are weakened when they are deprived of flexibility (Taleb, 2007). The result has been functional and increasingly specified office building designs and locations since the 1960's. This approach has removed the ability of office buildings (and market actors), and the wider locations within which they reside, to benefit from the uncertain and increasingly dynamic user. Modern commercial office buildings do not have the flexibility to respond to change. This can be a physical building issue, a location issue in terms of mono functionality and an institutional issue in terms of conventional practice. Indeed, findings in Chapter 2 and 4 indicate that customary methods of development appraisal, valuation and conveyance, particularly their inbuilt omissions and expectations, help shape, and then disguise, the incidence of secondary office vacancy while such buildings are often locked into and encased in their original functional orientation. These findings overlay the initial theoretical explanation put forward in Chapter 2, specifically the interrelated notions of institutional lock-in, behavioural lock-in, physical lock-in and theoretical lock-in.

The final part of this research explicated a conceptual framework for office vacancy that moves beyond the positive facets of vacancy, such as initial, frictional and

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cyclical vacancy types (Kerris and Koppels, 2007). This thread of enquiry built upon the initial work of Kerris and Koppels (2007) and set out a conceptual framework that considered positive and negative office vacancy, highlighting an additional set of vacancy concepts. The theoretical argument and findings in this thesis suggest that commercial office vacancy can be separated into two distinct tiers, that of natural vacancy and that of structural vacancy.

Natural vacancy describes those properties that efficiently clear through the classic supply and demand mechanism, while structural vacancy describes those properties that no longer clear through this mechanism. This distinction then interacts with the commercial office market, which in itself is separated into the prime market and the secondary market. However, these bifurcations do not run contiguously. Findings in Section 4.3 indicate that there is a great deal more secondary office property than prime office property (although this varies with location). Moreover, not all secondary office vacancy is structural; auxiliary vacancy captures those secondary office properties that still clear the office market and are held in reserve to support and fill-in for the prime market in certain locations.

Each office vacancy tier has its own characteristics, and although part of the same commercial office market, operate and manifest quite differently. To demonstrate this situation, the horizontal dimension of the vacancy typology describes the variation inherent in office vacancy, running from the macro to the micro level. The vertical dimension represents the property ladder and the building life cycle. The best properties are added to the top in a funnel-like system and the worst ones eventually drop out of the bottom dependent on their contingent circumstance (this happens to most properties eventually without some kind of statutory listing). This typology also forms the bridge between the first and the second research thread, because it is taken forward into the second research thread to help structure and make sense of the potential management options for secondary office vacancy.

Overall, findings under this research thread suggest that there is widespread secondary office vacancy in town and city centre locations across the UK. This is because contemporary office buildings are increasingly unable to adapt to the needs of the discerning user. While demand has fragmented and become increasingly dynamic and therefore uncertain, office buildings are increasingly constrained by design and institutional convention. However, the proceeding research thread indicates that this situation provides room for new ways of agile working and value extraction. The final

research thread indicates that the commercial office market is potentially ripe for disruptive innovation through new ways of agile working.

7.3.2 Managing the Incidence of Secondary Office Vacancy

The second thread of research focused on how commercial office market actors can manage and exploit the manifestation of secondary office vacancy in town and city centre locations in the UK (excluding Central London). This is in response to the contention that secondary office buildings must either evolve or die (Hancox, 2012). The office typology set out in Chapter 4 demonstrated that office vacancy is variegated and is more complicated than the 'natural' and 'structural' and 'prime' and 'secondary' segmentation. This thread of research takes forward this typological variegation to assess the relative strategies that can be used to exploit the latent potential held in secondary office property.

Firstly, this research thread recasts adaptive re-use into an alternative conception of urban agility. This is because research participants did not register with the concept of adaptive re-use because it omits some of the less intensive intervention strategies such as mothballing, repositioning, meanwhile use and deconstruction. Urban agility is equated with the building life cycle and is suggestive of an intangible but important mindset that recognises and seeks to exploit the uncertain nature of contemporary property demand. Throughout the research, research participants made reference to intangible issues, such as mindset, vision, appetite and the willingness to contest orthodox ways of working. An underlying finding in this thesis is that the agile mindset stands alongside more tangible characteristics such as the physical nature of buildings and the economics of development as a key factor in building re-use.

Findings indicate that where feasibility and viability are not prohibitive, conversion of office into alternative uses genuinely provides an opportunity to maximise latent value held in secondary office properties and to contribute towards the supply of homes, hotels and student homes. Where underlying rental structure are buoyant, agile re-use is an increasingly feasible option for any underperforming office space. However, the intent is not to advocate comprehensive change in use. Those office properties that still serve occupier demand should continue to do so. Indeed, one of the weaknesses of the governments permitted development legislation is that it does not discriminate between those offices still viable and those that are not. Rather, it is hoped that agile re-

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use becomes part of market convention and helps inform a flexible and proactive attitude toward secondary assets. However, the second research thread indicates that conversion is not the only agile building strategy. For this reason, Chapter 5 builds upon the vacant office typology set out in Chapter 4 and delineates four vacant office building strategies which reflect the downward trajectory of the property ladder. Specifically, these strategies are asset exploitation, demand repositioning, asset renewal and removal and redevelopment. Each strategy has an associated set of management techniques and relative degree of intervention.

This thread of research then takes forward the respective management strategies in order to consider the economics of office building agility. This part of the thesis can be used as a simple guide for appraising the economics of building agility. This was because research participants indicate that this issue is the primary generative mechanism in any secondary office building intervention. Ultimately, research participants indicate that any building intervention is predicated on an analysis of cost in relation to potential rent after intervention completion.

The research uses the historical work of Kincaid (2000,2002) and Barlow and Gann (1995) to interrogate the physical opportunities and challenges involved in agile building interventions, benchmarking their historical findings in the contemporary era (this part of the thesis can be used as a simple building surveying guide). A central finding is that the physical issues of office building re-use have not changed since these original pieces of work were conducted. However, what is different is the variable nature of these characteristics across different eras of building construction and location. This was determined by drawing on the initial office building typology set out in Chapter 2 and indicates that pre-war secondary office buildings are most suitable for continual use. This was because of their original flexible design associated with owner occupation, their assistive locational attributes and positive cultural capital.

Buildings constructed between 1960 and 1980 are also suitable for agile re-use, although they can have aggressive exteriors they often have a great deal of built in physical optionality and tolerance. This finding is positive because the first research thread indicated that these two eras of building construction were also most likely to be vacant. At the other end of the spectrum are those office properties constructed after 1980 which are most likely to be located in peripheral and out of town mono-functional locations, exhibiting weak underlying rental structures and highly specific specifications built at minimum cost. These office buildings (and locations like Reading, Luton and

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Milton Keynes which contain higher proportions of these properties) have uncertain futures as it is not obvious how these buildings can be re-used beyond the re-positioning phase as they are unsuitable in most cases for conversion. Section 7.4.3 will indicate that there is a significant opportunity for further study, especially in relation to the potential fate of the out of town office park.

This research thread supplements the initial findings by laying out an interpretation of the underlying causal nature of building agility using a PESTLE analysis. This was in order to explain the contingent ingredients that go into any appraisal of agile building intervention. Findings suggest that the primary generative mechanism, the generation of economic viability, is criss-crossed and undercut by additional issues of politics, relative rental structures and sociological, technical, legal and environmental conditions. Finally, this thread of research takes forward this analysis to present a set of scenarios, 'premium', 'stranded' and 'redundant', which describe the potential ability of vacant secondary office buildings to be re-used. As the names suggest, premium scenarios contain those buildings and associated circumstances that are most suitable for building agility, stranded scenarios describes those buildings that are basically sound but are constrained by circumstances and may benefit from subsidy. Finally, redundant scenarios describe those office buildings that have uncertain futures.

This raises the question, why is this potentially virtuous circumstance between eras of development and potential continual use not being exploited to its full potential and why are property actors not tackling those office properties that are not suitable for re-use? Chapter 4 and 5 indicate that this is because institutions of the commercial office market in the UK do not support a long-term perspective, rather they focus on short-term pump and dump strategies, followed by rapid depreciation and obsolescence as yet more properties are constructed. The final research thread responds to this situation and sets out a set of policy recommendations centred on the notion of disruptive innovation. Findings suggest, as the commercial real estate market prioritises premium office development in niche premium locations it could be leaving room at the bottom of the market for disruptive innovations that exploit underutilised secondary office property elsewhere.

7.3.3 Ameliorating Secondary Office Vacancy

The third thread of research focused on how the various institutions involved with secondary commercial office vacancy could be altered to alleviate the recurrent manifestation of secondary office vacancy. It took forward the concept of building agility, initially set out in Chapter 5, and lays out the potential causal conditions that may assist the ascendance of this perspective. Findings suggest that these conditions (collected around a set of policy recommendations) need to coalesce to form a destructive innovation that displaces the orthodox way of working in the UK commercial office market. The intention would be to capitalise on changing occupier preference and create the conditions for a revalorisation of secondary commercial office space (as new cultural, social, economic and institutional values are assigned to contemporary office buildings) through a dynamic of quality and price re-construction. This situation does not necessarily describe the intervention of new products/commercial space into the commercial office market. Rather, it refers to the change in the way existing secondary office buildings are valued.

Research participants indicate that there are two options for potential urban agility, planned obsolescence or functional tolerance. Planned obsolescence involves constructing buildings with a finite life span, while functional tolerance involves constructing office buildings for the long-term but with concomitant optionality. Research participants preferred the latter. However, planned obsolescence is an interesting topic and is revisited in Section 7.5 as an opportunity for further research. Introducing optionality protects against the physical, institutional, behavioural and theoretical lock-in outlined in Chapter 2 and increases the potential for office designs, actors and institutions to exploit change. However, research participants indicate that any disruptive innovation based on agility and optionality must be undercut and mediated by four contingent institutional circumstances: the concomitant need for an agile spatial strategy and an appropriate system of government ordinance; a design guideline which accommodates optionality; an holistic method of financial and building appraisal based on building information modelling; and a focus on agile project management which is embedded in education. Encouragingly, Chapter 5 observes that methods of project management have had considerable dialogue with the concept of agility (see the Agile Manifesto written in 2001), however, research participants indicate that this mind set has not yet entered the commercial real estate market.

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In summary, research participants indicate that property actors will increasingly be presented with a dilemma; to continue producing highly specified products aimed at increasingly smaller segments of the premium market, or to switch allegiance to an agile perspective that recognises and exploits the dynamic nature of contemporary occupier demand. The mission under the agile approach is to accommodate and then benefit from dynamic occupier demand in a non-predictive way, conceding that the future needs of the occupier are inherently uncertain. Therefore, optionality, functional tolerance and its in-built redundancy is opportunistic because it caters for and exploits potential change.

The increased pace of the globalised world, where the notion of the 'job for life' is almost redundant has led to change in the demand for office property. It is feasible that we have seen the life and death of the commercial office park in less than 30 years as potential office occupiers are once again looking at town and city centre locations as attractive places to work and live. Rather than flows of capital creating office markets (Lizieri, 2009) it is increasingly networks of people with agile work and social requirements that are breaking down the office market and recreating it in their own image. Perhaps the next office building archetype will not be characterised by 'long swings' and its distinct physical conditioning (Barras, 2009), but rather its inherent flexibility and ability to change.

7.4 Limitations to Research

This section sets out the limitations in this research and should be read in conjunction with the research and methodological parameters and the opportunities for further research that immediately follows this section. Any analysis of the commercial office market is only a snap-shot in time, immediately superseded by events. The data in this study is based on 2013/14 and therefore considers the period before the commercial office market has had a chance to rebound in relation to the traditional theory of market cycles. Indeed, during write-up there have been numerous articles in the national press that proclaim wafer-thin supply conditions and rising rents in Central London and the regional town and city centres. Only time will tell (and further longitudinal research) whether the findings in this research are a result of the market cycle or a definite structural change in the nature of demand.

During methodological design and data collection, data imperfection, consistency and access were regular frustrations. For instance, an early decision was taken to omit

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Edinburgh and Birmingham from the study because the data that each local authority provided was of such poor quality. Both of these locations are significant omissions from the UK study, both containing established commercial office markets, and relate to a source of considerable frustration on the researcher's part. Furthermore, different locations store and process their data in different ways and use different data storage applications which resulted in significant issues of consistency upon receipt of data in terms of format and the consequent time taken to refine datasets into a synthesis. This issue was particularly evident in the NNDR dataset. The VOA data set was more consistent in terms of format. However, the information that was inputted into the VOA dataset was inconsistent (especially in relation to address), reliant on the individual valuation officer conducting a building assessment.

In addition, some locations simply refused to release information, in this case the cities of Bristol and Sheffield, on grounds of the threat of crime (a copy of the Sheffield City Council refusal letter is contained in Appendix 3). This proves that information inconsistency is not only an issue of data and its processing, it is also related to the attitude of the respective local authority towards data and information. Certain authorities were very positive in relation to open data. Leeds and Manchester have their data freely available on their websites. However, other authorities would only release information after a significant period of negotiation. Indeed, this indicates that the invisibility of secondary property outlined in Chapter 2 is not only a consequence of commercial real estate markets; it is also a consequence of the reticence of public data providers to release data with which to contest this situation.

The VOA summary data could be immediately improved if each valuation office carried a GPS system and logged the geo-coordinates for each hereditament and building. This would counteract address information inconsistency and enable the differentiation of buildings with identical post codes. One of the main reasons that GIS analysis was not conducted in this research was because buildings with identical post codes could not be differentiated, skewing potential GIS visualisation.

Furthermore, each building should be given a unique property reference number (this was done manually in this study for all 14,000+ hereditaments) which can then be related to the underlying billing account reference numbers. This will be particularly important in the future as performance of real estate will be a critical component of public sector service provision (its performance is directly related to the local business

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rate retention model). Effective monitoring will demand an understanding of building characteristics rather than the taxable unit.

Moreover, local authorities should use consistent information database systems and all property datasets should contain a common unique property reference number (UPRN) with which to easily link datasets. A constant frustration throughout this research is that there is a lot of information out there that remains unexploited because of the time related difficulty associated with linking them together. For instance, the researcher would have liked to link Environmental Performance Certificate Information (EPC) data to the dataset and the National Land Use Database (NLUD). Although available to the public in non-aggregated form (EPC) and in raw format (NLUD), each assessment does not have a common identification code. Furthermore, the respective floor space measurement methods are not consistent with the standard measurement of net internal area used by the VOA and NNDR systems.

Many of these issues have been highlighted by researchers since at least the 1990's (Currie and Scott 1991). However, little has been done to improve this situation. Yet, this also presents an opportunity for academics to improve matters. Despite all of the inconsistencies, inaccuracies and the inherent lack of transferability in commercial real estate data, this author contends that the rich data resources already available either in the public domain (as well as those yet to be released by the various tiers of government) are a considerable opportunity for academic research and consequent improvements in practice. In particular, there seems to be considerable potential to link the emerging building information modelling (BIM) capability into wider urban information resources. This is connected to the exposition of an agile spatial strategy in Section 6.3 and offers the opportunity to simulate the impact of agile building interventions on the wider urban area.

Further, some of the Delphi process took place over a number of conversations over a period of months. Due to the profile, location and nature of some of the participants it was not possible to conduct the exercise in a two-stage linear fashion. Opportunities, sometimes a matter of minutes, were taken when the opportunity was apparent. Where necessary, research participants referred to, and gave permission, to use existing information to supplement their views, especially when time could not otherwise be afforded. Some of these participants were also relatively prominent in the professional press and, as a consequence, conversations in the Delphi process were occasionally also reflected in editorial commissions and company press releases. However, this process

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enriched the research process as it demonstrated the currency and importance of the research that was being conducted. In addition, during the research, parts of the thesis were contracted as research by one of the research participants. Again, this enriched the project as it demonstrated the currency and value of the study. No new research was conducted, rather, the findings were distributed to a wider audience than may have been possible otherwise (see Appendix 7).

Finally, although there are similarities in process and response in relation to secondary office vacancy, each location in the sample area has a unique arrangement of layering in respect to historical evolution, overlapping government policy and institutional arrangements and conventions. As such it may be difficult to transfer findings from one location to the next. However, Chapter 4 proves that secondary office vacancy is a large part of vacant stock in all locations. The important question is how this situation can be countered and potentially exploited. Therefore, the findings and recommendations in Chapters 5 and 6 are transferable and can be used as a useful tool in terms of management and potential policy recommendations.

7.5 Concluding Remarks

As the researcher finished writing this thesis in the summer of 2015 there was not a genuine sense of completion or satisfaction. At each stage of research and in each chapter there were areas of discussion that the researcher wished to extend and extra analysis that he would have liked to conduct. In writing about the history of the commercial office market in the UK, he wanted to explore further the intricacies of commercial office evolution, in the theoretical sections he wanted to explore the concepts of path dependence, lock-in and agility in greater detail and thoroughly integrate it with the global and local commercial real estate markets and consider in greater detail the opportunities and challenges involved in both conceptualisations. In the empirical chapters he wanted to conduct additional modelling to draw out more detailed geographical typologies and transmit more of the rich personal data contributed by research participants.

Therefore this thesis is a staging post, a foundation for a continuing programme of research. Throughout this thesis, opportunities for further research have been drawn out. Without doubt there are several lines of enquiry waiting to be either further exploited

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or freshly pursued. As an afterword, the proceeding section indicates where this journey may lead.

7.5.1 Human Behaviour

A recurrent argument throughout this thesis is the importance of human behaviour. This was initially set out in Chapter 2 in relation to the maximising presumptions of neo-classical economics and the sub-optimal alternative. It was then empirically inserted into the research through the recursive Delphi enquiry and the delineation of the discerning user and its part in the structural change in the nature of demand and potential agile change. However, although the views of property market actors form the basis of this study (alongside the stock inventory of secondary office accommodation in the UK) there was still considerable frustration that the characteristics of occupier demand could not be isolated in the same way as the physical characteristics of property.

Kincaid (2000, 2002) himself tried to create a model of supply and demand by using the Standard Industrial Classification (SIC) system of economic classification (there are more than 500) and equating this with potential building function. Correctly in the researcher's opinion, Kincaid (2000, 2002) observed that you need to analyse both supply and demand. However, his system, which is lauded for its ambition, classifies demand rather than follows its dynamics. It is the belief of the researcher that a more useful avenue would be to design a real time model of occupier demand. This is because demand is continually changing, instead of classifying it, it should be followed and then these findings should be fed into the building and spatial decision making process. It is therefore important that future research investigates demand in more depth. Indeed, Chapter 4 indicates that one of the biggest constraints in commercial property development is that it is supply led without an explicit focus on user/demand. Future research could explore emerging methods of computerised social research offered by internet search behaviour analysis. These findings could be used to understand how the user behaves in relation to building choice.

7.5.2 Other Types of Property and Planned Obsolescence.

The primary findings in this thesis have consciously focused on a positive future for secondary office property. However, this has been to the detriment of those secondary office properties that cannot be repurposed or renewed or even effectively deconstructed and redeveloped. Considerable research is needed into these office properties that exist in limbo, without a future in existing use but perhaps without the underlying economic fundamentals to justify demolition. Furthermore, although cursory attention has been paid to Central London, often in comparison to the rest of the UK, the study discounted the former and centred on the rest of the latter. This was because Central London is unique in its economic characteristics and has already received considerable attention. However, this does not mean that Central London cannot contribute to the agility debate within its own unique set of circumstances.

In addition, as the study progressed, less emphasis was placed upon office properties constructed after 2000, this was because these properties formed negligible quantities of vacant secondary stock. However, it is conceivable following lease expiration, that these properties will play a greater role in the vacant secondary office debate, especially those properties that are highly specified and located in mono-functional areas. It therefore seems prudent to suggest that research now into this era of properties will provide a useful future cast in relation to the issues that these buildings may face.

Furthermore, Chapter 4 and Section 7.3.1 speculate that the real vacancy rate could be far greater than the initial findings in this thesis, once empty property rate avoidance and the issue of 'grey space' is included. However, both of these issues sit outside of the boundaries of secondary data analysis conducted in this study and are in many ways hidden facets of office market inefficiency. Researching this issue would be beneficial in three main ways. First, further evidence in relation to these issues would begin to sketch a picture of overall vacancy and efficiency in the commercial office market. Second, the analysis of empty property rate avoidance would be beneficial to local authorities who are under pressure to maximise their business rate portfolios under new models of business rate retention associated with fiscal devolution. Third the analysis of grey space would be beneficial to landlords and tenants who are interested in understanding how efficient their office floorspace and tenancy arrangements really are.

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Moreover, Chapter 6 outlined two potential future trajectories for building agility, functional tolerance and planned obsolescence. Due to the normative focus of enquiry set out in Chapter 1, the study chose to focus on functional tolerance. However, there seems to be considerable mileage in also investigating planned obsolescence, especially as findings suggest that its temporal perspective is coherent with the current investment rationale of commercial office development. Perhaps, rather than focusing on a choice between these two positions, research could investigate how both options could complement one another.

Finally, in focusing in on office use, it seems prudent to suggest that there is considerable value in researching other types of property use such as retail, industrial, residential, local government and student accommodation. For instance, towns and cities in the UK have seen considerable studentification (Smith, 2002) in recent decades. Many of the associated living arrangements, notably student halls, are converted office buildings or be-spoke student buildings are constructed using similar construction methods and values to office buildings constructed in the 1980's and 1990's. Now that society is starting to see significant processes of de-studentification in our towns and cities as student populations move (see Kinton 2013 and her analysis of Loughborough) and become more discerning, it is conceivable that we will see similar vacancy issues in this type of property. Furthermore, central and local government has gone through a significant rationalisation in the UK since the 2008 recession and the beginning of the 2010 Coalition Government project. This has flooded the market with (previously) public sector operational property. What opportunities and challenges do these buildings present and how are locations dealing with the flood of new space? In summary, as use categories and user demand continues to change it seems likely that the fallout and any solution will necessitate cognisance of all types of property (and their specific requirements in potential change) use in order to understand agile change.

7.5.3 Mono-functional Office Areas

Although mono-functional office locations in peripheral and out of town locations were discussed throughout this thesis (but primarily in Chapter 5 in relation to the location characteristics of continual use) the primary focus of the research was town and city centre locations. Therefore, there is considerable scope for further research in relation to these locations and especially the uncertain future of the out of town office park.

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Research in the Netherlands over the last decade (notably by Remoy, 2010) has indicated the widespread vacancy in mono-functional office parks and the inability of these areas to accommodate new use due to their mono-functionality. Interestingly, office parks did not emerge from empirical investigation despite there being anecdotal proof that they were often empty.

Research participants indicated that this is to be expected, landlords in office parks are adept at empty property rates avoidance. While others indicate that certain local authorities are pursuing informal business rate exemptions on historical office parks beyond the statutory exemption period associated with historical Enterprise Zones. Similar trends are beginning to materialise in North America (Zac, 2015) where many millions of sqft of floorspace are vacant in relatively new office properties. Research participants indicate that office properties constructed in these locations, typically since the 1980's, are often of flimsy lightweight construction, have deep and wide floor plates, and are aesthetically superficial. They indicate that there is very little you can do with these buildings beyond demolition as you cannot increase their environmental performance and they have no amenities.

Chapter 5 indicates that vacant office buildings in town and city centre locations often still have a future because of the assistive locational characteristics. However, office parks are constructed poorly and do not have assistive locational characteristics. Some of these office buildings are still being built out, however, it is conceivable that they may never be occupied as occupiers switch back to the home, town and city centre, as the preferable place of work. This could be an example of office construction lagging so far behind the requirements of demand that they are obsolete during the initial period of vacancy before first tenancy. Many of these office locations were built under incentive schemes (such as Enterprise Zones researched by Greenhalgh in 2003, 2008). It is conceivable that a new set of incentive schemes will be needed to take these buildings back down.

7.5.4 Heritage

Whilst built environment heritage is intuitively consistent with the principles of agility and continual use, Chapter 6 illustrates that it can also be restrictive as policies in relation to this issue do not necessarily assist fluid change. Therefore, it seems prudent to suggest that further research into this issue and this apparent disconnect between heritage and

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agility could prove fruitful in relation to the continual use of secondary office buildings. It seems apparent that, although there has been a discernible movement toward heritage conservation (in preference to heritage preservation), many of the historical policies associated with Listed Building do not promote building re-use, rather it leads to inertia and in some case land banking in high value locations. Typically, these office buildings are valued because of their historical design and previous use. However, it is this design and use that is obsolescent and has led to vacancy. Society celebrates the grandeur of these buildings in the aesthetic and cultural sense even though they are underutilized and potentially vacant. A tentative research theme could be to consider historic value in combination with an embodied notion of usability as the basis for building conservation. This would move beyond the sole emphasis on the physical characteristics of building heritage to include issues of functional and economic obsolescence.

7.5.5 A New Lease of life and Valuation Instrument

There was a certain degree of consensus from research participants, primarily in the serviced office sector, in relation to the need for a new office lease arrangement and concentration on the real value of property which reflects the requirements and frustrations of the small business/new start-up community. It is anticipated that this opportunity will be most beneficial to the repositioning strategy outlined in Chapter 5 and could be considered an agile lease. Indeed, a research participant, the CEO of a leading serviced office provider, indicates that in the UK,

"The economics and practicalities of offices is changing. Short, flexible leases are acknowledged and widely used. However, the valuation of office property continues to be based on the original headline rent. This does not reflect the real value of property."

This point is directly related to the meaningful valuation of office vacancy outlined in Chapters 4 and 5. Although compound loss provides a means of valuing the cost of vacancy, this is largely irrelevant if the institutions of conveyance are based on what went before, the headline rent and book value of the property. Indeed, although traditional long leases provide good valuations they are not based on the real

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characteristics of the commercial office market (nor the frequent trading of property in the short-term), rather, they are a hypothetical valuation conceived at building origin. Anticipating this research opportunity, the same research participant indicated that,

"There is no quick and easy answer regarding the amendment of the traditional valuation model, but accommodating this mega trend within an amended model will become one of the most important roles of industry professionals in the coming years."

This links in to the requirement for a revised development appraisal instrument outlined in Chapter 6.

7.5.6 Combining Development Appraisal and Management

At the same time as the shortened lease has become an accepted part of tenant requirements, there is also the need for a longer term development appraisal instrument. In many ways this is a reversal of historical practice. When the 25-year lease was a common part of conveyance it was customary for investors and developers to look no further than the first few years of the building life cycle, because the long lease provided income security for a 'pump and dump strategy.' Chapter 4 indicates that it is this process that has resulted in much of the functional redundancy that we see today. The long lease is now less common, arguably extinct outside of premium locations. The consequence is increased demand for a longer term development appraisal instrument that accommodates and accounts for agile change in response to shortened tenancies and potential recurrent changes in use. Chapter 6 has outlined this potential saw tooth process in combination with Building Information modelling (BIM). However, far more research is needed to consider the opportunities and challenges involved in the development of such an instrument.

Furthermore, this thesis has concentrated on outlining the ingredients that go into an appraisal of building agility, it has not presented a standalone decision making instrument in relation to agile intervention, nor have these initial ingredients been benchmarked and validated against live office buildings. This potential research avenue is considered the natural progression for this research. A major finding emanating from Chapters 5 and 6 is that development appraisal, office building valuation, building

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management and appraisal of intervention should form part of a cohesive model throughout the building life cycle. Developing such a model will be no easy task, but it seems prudent to suggest that starting with a small number of pilot buildings and developing some initial parametric models that assess the opportunities and challenges of this approach, should prove worthwhile for those interested in re-using existing office properties.

Moreover, relating to the observations in Chapters 2, 4 and 6 there is also considerable mileage in researching the basis for improved commercial property statistics. This is because the incidence of secondary office vacancy can only be tackled when it is revealed and located in its contingent circumstances. Indeed, a thread throughout this thesis is the detrimental impact of disconnecting the building from the wider contingent milieu. BIM is an incredibly powerful method of building appraisal but it must be connected into its wider contingent surroundings. A fruitful avenue of research would be to appraise the opportunities and challenges involved in unifying the respective data resources already available. These resources include the VOA Summary Valuation Statistic, Non-Domestic Rate Returns, but also Energy Performance Certificate information, the National Land Use Database (and the Scottish equivalent) and the various address-based datasets provided by the Ordnance Survey and the National Postal Service. Immediate improvement could be achieved by adopting a unique property reference number (UPRN) between datasets, ingraining accurate GIS referencing in all datasets and by using a common set of building measurement guidelines, for instance those recently promoted by the Royal Institution of Chartered Surveyors (RICS) international property measurement standard (IPMS) agenda (the common international property measurement standard for offices was published in November 2014).

7.5.7 Design Guidelines and Guidance Notes

Chapter 6 sketches out some principles for a design guideline and suggests the potential for a guidance note in relation to functional tolerance and optionality. However, far more research and benchmarking in real urban situations is needed to delineate the specific tolerances and guiding principles needed in flexible building design. Embedding such guidelines in a formal guidance note (for instance with the RICS) would help install an element of institutional legitimacy in the market place (again BIM would be a useful tool in visualising the various parametric possibilities).

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RICS Guidance Notes denote 'best practice' and are an accepted barometer of commercial real estate conventions. Indeed, RICS membership is founded upon staying cognisant of new best practice procedures in order to remain professionally competent. Research participants indicate that lobbying for and publishing such a note would form a key part of establishing the ground rules for agility.

7.5.8 Geographic and Econometric Modelling

The empirical findings in section 4.3 prove the existence of secondary office vacancy. One of the great frustrations during research was that greater geographical modelling could not take place due to structural and time based constraints and complications in relation to preparing the data for GIS analysis. Although the findings in this thesis make considerable reference to location in term of its relative bearing on the initial incidence of vacancy and its potential management and amelioration, the majority of analysis considered the study area in totality. This is because the primary aim of this study is not to focus exclusively on issues of location, nor its relative geography. However, there is considerable mileage in assessing the relative characteristics of the study sample in terms of inter and intra urban tendencies and developing a typology of locations based on their relative characteristics and susceptibility to management and potential amelioration of the incidence of secondary office vacancy.

Related to the previous point, due to the scope of the study area there has been little potential for micro analysis, rather, the emphasis has been on broad enquiry. There is therefore considerable potential in pursuing micro enquiries into individual town and city centre locations to understand how local actors are interacting with and tackling the incidence of secondary commercial office vacancy. Linking back to the policy recommendation for an agile space strategy in Chapter 6, such findings would help inform the design of locally specific intervention measures. Croydon would seem to present an interesting opportunity for initial analysis, in many ways this location is the poster child for secondary office vacancy and 1960's/1970's office development. Yet, it also exists on the periphery of the premium Central London location. Instead of basking in the afterglow of premium locations, this area has been restrained from agility because buildings in this location are held in reserve for economic development (demonstrating a potential negative aspect of auxiliary vacancy). These marginal areas on the border of premium spaces also suffer most during times of recession as they are the first to be

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vacated. However, micro analysis should not be restricted to geographical analysis. There is also merit in appraising some of the individual issues that have emerged during enquiry, for instance in relation to the utilisation of the Business Premises Renovation Allowance (BPRA) and the impending threat of Minimum Energy Performance Standard (MEPS) legislation in 2018.

Furthermore, there could be substantial benefit in comparing the results in the UK with international findings (something also suggested by Remoy, 2010), although, a central ontological claim in this thesis is that all office markers are different due to their contingent circumstances. An interesting line of enquiry would be to appraise how they are different. Finally, the empirical findings in this thesis are based on a one-year snapshot (2013/2014) of the commercial office market in the UK (see Section 7.4). Therefore, longitudinal research would provide some substantiation to the qualitative findings in this thesis which suggest that the incidence of secondary office vacancy is, in part, a structural phenomenon. Are the secondary office findings in this thesis a flash in the pan, the result of the office market languishing in respect to poor economic performance, or do they signal a systemic change in relation to a permanently altered way of working?

Furthermore, a central argument in Chapter 2 was the focus on econometric analysis that largely ignores secondary office vacancy. Although the central focus in this thesis was to examine the practitioner and socio-econometric characteristics of secondary office vacancy, there is clear opportunity to introduce the secondary data in this research into econometric real estate modelling. This research avenue has the potential to increase the sample validity in traditional econometric analysis which focuses on the natural rate of vacancy.

7.5.9 Public Policy and Sustainability

Chapter 6 laid out the justification for an agile space strategy and a governmental policy framework that positively tackles the incidence of secondary office vacancy. However, research participants indicated that this is no easy task, the disjointed situation in the UK reflects this situation. Therefore, there is considerable utility in evaluating what an agile space strategy might look like and how the respective government ordinance measures might support this. What challenges do regulators face in relation to this challenge? Should there be a focus on spatial zoning, consistent with parts of Western Europe and North America or should local planning authorities manage agility on a building by

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building process in an ad-hoc fashion, cognisant with the UK tradition of planning and development control? Importantly, recent permitted development changes in England have removed the necessity for planning permission on certain types of office conversion. This has removed the ad-hoc mediation service offered through traditional development control. What are the consequences of these changes for urban locations and the public good?

Furthermore, the researcher has consciously avoided an explicit focus on urban sustainability. Although it forms part of the normative persuasion set out in Chapter 1, research participants were adamant that the issue of sustainability was not a prime driver in any consideration of building re-use. Research participants also indicated that sustainability should not be used as a justification for building re-use because the market does not place value on the concept. Instead, research participants indicated that an argument and set of tools need to be put forward that justifies re-use on grounds of practical deliverability, cost and rate of return. This is reflective of Wilkinson's (2011) earlier study that found environmental objectives to be non-drivers in adaptive re-use.

Although explored little in this thesis, this is an interesting line of enquiry because much of the historical literature on building re-use (stretching from Kincaid 2000, 2002 and the more recent exploration by Wilkinson et al., 2014) hangs the justification for continual building re-use on a relatively uncritical perspective of urban sustainability. Participants in this research indicate that this is not a productive line of justification in the UK. They indicate that unless the respective commercial real estate markets in the UK have a Damascene moment in relation to urban sustainability, it will be short-term rate of return orientated business as usual. It is not the intention of this researcher to discount urban sustainability. It presumably forms part of any discussion on the future resilience of urban locations. However, a productive line of enquiry could be to research how the results and tools set out in this thesis could be used to exemplify the deliverability and profitability of urban sustainability rather than its ideological appeal.

7.5.10 Theoretical Development

Two new conceptual positions have been tentatively produced in this thesis, the first based on path dependence and lock-in (Chapter 2) adapted from the work of Grabher (1993) and 'building agility' (Chapter 5). Considerable additional research is required to substantiate and develop these theories in more detail, both academically and in the

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practitioner context. Both perspectives resonated with research participants and this provides a certain degree of validation in relation to the suitability of the outline constructs. In addition, both constructs provided a useful interpretative framework for the research framework which did exist before study. However, researching the movement from an outline construct of path dependence, lock-in and building agility to a robust theoretical perspective, which is useful and distinctive in its own right, will necessitate further theorisation and benchmarking. It is hoped that both theories, which are linked, could provide a useful counter to some of the traditional perspectives that favour the maximising assumptions of economic man and the glitz and glamour of premium locations. Perhaps by focusing on marginal properties and locations, rather than their premium counterparts, it will be possible to foster a critical real estate studies that probes the invisibilities, inefficiencies and perversities that pervade town and city centre locations all over the UK.

Furthermore, critical realism has been used to focus the ontological and epistemological direction of this thesis. Critical realism has been rarely used in property research, (Lawson, 2006 in housing research is a rare example), however, it may provide a useful methodological basis for property research. Due to the focus of research it has not been possible to delve into all of the underlying foundations of this position. However, additional research could probe the suitability of its mid-range trajectory, combining realism and social construction. Potentially, it could provide a bridging perspective for those researchers that focus on quantitative enquiries and those that pursue studies based on social constructivism and human behaviour. Finally, the concept and process of disruptive innovation (Chapter 6) will benefit from additional research as findings suggest that this process will play an important role in any agile future. Perhaps, in the future the built environment will not be defined by distinct types of conspicuous design and wealth. Rather, it will be defined by flexibility and potential usability as the built environment is taken apart and put back together again in accordance with dynamic consumer need.

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Sources of images are incorporated in the image captions.

Appendix 1: Physical Assessments

Focus	Relevant studies
Age	Barras and Clark 1996; Ball 2002; Kincaid 2002; Fianchini 2007.
Condition	Boyd & Jankovic. 1993; Isaacs (in Baird et al.)1996; Swallow 1997; Kincaid 2002; Kersting 2006.
Height	Gann & Barlow 1996; Kincaid 2002
Depth	Gann & Barlow 1996; Kincaid 2002; Szarejko & Trocka-Lesczynska 2007.
Envelope and cladding	Gann & Barlow 1996; Kincaid 2002;
Structure	Gann & Barlow 1996; Kincaid 2002; Kersting 2006
Building services	Gann & Barlow 1996; Kincaid 2002; Snyder 2005; Szarejko & Trocka Lesczynska 2007
Internal layout	Gann & Barlow 1996; Swallow 1997; Kincaid 2002; Fianchini 2007; Szarejko & Trocka-Lesczynska 2007
Flexibility	Gann & Barlow 1996; Fianchini 2000; Kincaid 2002
Location	Isaacs (in Baird et al.)1996; Bryson 1997; Ball 2002; Remoy and van der Voordt 2006
Heritage	Ball 2002. Snyder, 2005.
Size	Gann & Barlow 1996; Kincaid 2002; Ball 2002
Accessibility	Gann & Barlow 1996; Ball 2002; Kersting 2006; Remøy & Van der Voordt 2006; Fianchini 2007; Ellison and Sayce 2007.
Parking	Ellison & Sayce 2007.
Character / aesthetics	Ball 2002.
Acoustic separation	Gann & Barlow 1996
User demand	Ball 2002.
Site conditions	Isaacs (in Baird et al.) 1996.
Adapted from Wilkinson et al (2014)	

Appendix 2: Property Data Resources

Resource	Description	Issues
DCLG 1998-2005 vacancy statistic.	Local authority level estimation of vacancy utilising information collected for business rates purposes.	Methodological estimations present inaccurate picture.
Neighbourhood Statistics commercial and industrial floor space statistics 1998 – 2008.	Summary statistics at Medium super output (MSOA), local authority district (LAD) and government office region (GOR) level. Specifically, hereditament, M2, £m/2 and rateable value.	Dated and cannot be compared to recent VOA data release due to incompatible methodology. Although similar to the DCLG statistic for the same period it is perhaps unique in providing data below the local authority level.
DCLG Industrial and Commercial floor space statistics 1998 -2008.	Summary statistics regarding hereditament, M2, £/m2 and rateable value.	Dated and cannot be compared to recent VOA data release due to incompatible methodology.
Valuation Office Agency Experimental Statistic 2000-2012.	Provides local authority scale commercial property data, including hereditament, M2, £/m2 and rateable value.	Methodologically incompatible with previous data releases.
Valuation Office Summary Valuation.	Contains similar information to the rating list but also includes floor space, number of floors and their usage.	Provides building attribute information but does not account for vacant property. Vacancy has no influence on valuation.
Valuation Office Rating List.	Includes details of all non-domestic properties	Provides building attribute information but does not

Appendices

	(approx 1.8 million entries), addresses, postcodes, descriptions, classification codes, rateable values.	account for vacant property. Vacancy has no influence on valuation.
National Land Use Database 2001-2009.	Yearly information regarding previously developed land and premises. Last data published 2009.	Premises based information is based on site rather than building attribute.
ePIMS	Regularly releases information regarding physical attribute, occupancy profile and vacancy with regard to land and property. Information is attribute based and Geo Coded	Potentially a useful resource but does not regard local authority or educational land and property. Instead it focuses on Central Government orientated agencies such as the Ministry of Defence and the Department for Business Innovation and Skills.
National Non Domestic Rate Returns (NNDR).	Accurate record of vacant commercial properties within a locality collected for business rate purposes.	Does not regard buildings, only hereditaments. No regard to building attributes.
Commercial Data Resources.	Organisations such as Estates gazette and Co-star Focus publicises vacant property according to their own market intelligence.	Partial in scope but arguably the most current data resource.

Appendix 3: FOI Letter

Our Ref: FOR/R/ LO

Your Ref:

Date 4 July 2013

Dear Mr Muldoon Smith

**Notice under Section 17(1) of the Freedom of Information Act 2000 -
REFUSAL TO DISCLOSE INFORMATION**

Thank you for your request for a list of the empty commercial properties in Sheffield dated.

We do have a list of empty commercial properties in Sheffield, but we do not disclose this information to the public. This decision is based on Section 31(1)(a) - Law Enforcement, of the Freedom of information Act 2000.

Disclosure Decision

We also consider that the disclosure of the information may prejudice the prevention and detection of crime because it might make the properties more vulnerable to criminal and anti-social activities, in particular squatting, physical damage and theft of fixtures, contents and fittings. Consequently, the information is refused under section 31(1)(a). This section is a qualified exemption and requires a public interest test to consider whether the public interest in maintaining the exemption outweighs the public interest in the disclosure of the information.

Public interest arguments in favour of disclosing the information

We understand disclosing the information could:

- Support the financial and commercial interests of the public by increasing the chance of empty properties being brought back into use, either directly

...the interest arguments in favour of maintaining the exemption...

We also understand that:

- Releasing this information could make it possible for crimes to be committed. It would highlight "easy targets" for crime (theft and criminal damage) where offenders would be less likely to be detected.
- The residents that are in the properties in close proximity could also be under threat due to the fact that a crime is being committed so close to them and they have an expectation to feel secure in the environment that they live in.

Balance of the public interest arguments

The disclosure of the information serves the general public interest in promotion of better government through transparency, accountability, public debate, better understanding of decisions, and informed and meaningful participation of the public democratic process.

Disclosing the details of empty properties may help to bring these properties back in to use with a numerous benefits to the public, for example:

- Reduce the wasted costs to the owners and wasted opportunities to developers
- The crime associated with empty properties (criminal damage and theft and squatting) would be likely to fall
- The 'broken window syndrome' by which areas go into decline, affecting living standards and property prices, would be likely to be reduced

In contrast, there is a strong public interest in maintaining the exemption in avoiding likely prejudice to the prevention of crime. The crime in this case would be likely to include a diverse range from anti-social behaviour to criminal damage at empty properties. Tackling issues like these would involve significant public expense and it is in the public interest to protect property and to ensure that public resources are used efficiently. There is also a compelling public interest in avoiding personal distress to the direct victims of the crime and to those in the wider neighbourhood who may be affected. Once an area is subject to crime, it has an impact on the surrounding neighbourhood, reducing the value of neighbouring properties and the quality of life of the residents.

On balance there is substantial public interest in bringing empty properties back into use, which may be met to some extent by the disclosure of the information; however, we believe the public interest in avoiding prejudice to the prevention of crime outweighs the public interest in disclosure.

Please note, Public Interest is what is of greater good to the community and not what interests the public (guidance on Public Interest can be found on the Information Commissioners Web-Site on the following link - http://www.ico.gov.uk/for_organisations/guidance_index/~media/documents/library/Freedom_of_Information/Detailed_specialist_guides/the_public_interest_test.a.shx)

This notice is a Section 17 notice under the Freedom of Information Act 2000.

Signed: 

Post Title: Assistant Director of Finance

Date: 04 July 2013

Appendices

Appendix 5: Questions Stage 1 and 2

Stage 1

1. How would you define secondary office accommodation?
2. What are the primary causes of secondary office vacancy?
3. What are the barriers to bringing vacant secondary offices back into use?
4. How do property owners, investors and regulators identify the incidence of depreciation and obsolescence in relation to secondary office property?
5. How do landowners, investors and regulators manage depreciation and obsolescence (if at all) in relation to secondary office property?
6. What does the term 'structural vacancy' mean to you?
7. What specific characteristics does 'structural' vacancy have?

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8. What strategies are being followed by landlords, investors and regulators to tackle the incidence of 'secondary office vacancy'?
9. Recently legislation has been passed that has relevance to 'secondary office vacancy,' what are your views regarding:
 - i) Permitted development right rule changes for office to residential conversion
 - ii) Minimum energy performance certification (EPC) enforceable in 2018
 - iii) Business Premises Renovation allowance (BPRA)
 - iv) Empty property taxation (EPR)
10. In your view, what are the solutions available to tackle 'secondary' office vacancy?
11. What do you understand the term 'adaptive re-use' to mean?

Appendices

12. What are your views regarding adaptive re-use as a potential solution to 'secondary office vacancy'?
13. What are the critical factors that make an adaptive re-use approach viable in the UK?
14. What are the key barriers to the pursuit of adaptive re-use (are these different to question 3 and if so in what way)?
15. How should buildings in the future be developed in order to assist continual adaptive re-use?
16. How could the principles of adaptive re-use be promoted?
17. Please provide any other comments

Appendices

Stage 2 Questions

The following questions build upon the first line of enquiry and have been designed to drill deeper into some of the themes that have emerged from initial analysis. Each question is preceded by a proposition from the first stage of analysis in order to provide some context.

Please read these questions in conjunction with the summary of findings from the first stage of enquiry (see separate attachment).

1. Office specification continues to improve (for instance the British Council for Offices (BCO) office specification is revised regularly) however in consequence older properties are rendered obsolete due to their inferior specification. The result is that the advent of secondary office vacancy will continue and potentially accelerate.

Q: How should the basis for office specification and quality be reconsidered to account for the continually changing nature of demand?

2. The 'market' continues to build office properties that are rendered obsolete in a matter of decades (sometimes never fully let) based on rigid physical specification, institutional norm and previous modes of working and with little regard to end user need.

Q: What can be done to make sure that buildings are conceived with regard for the needs of the end user?

3. The main barrier regarding adaptive re-use is the tension between the long term perspective of adaptive re-use and the short term profit perspective of finance, development and investment. The 'next' use of a building is rarely considered, initial development appraisal and valuation rarely considers a building beyond the first lease.

Q: What circumstances would induce these interests to consider the 'next' use of a building and a longer term perspective?

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4. While certain segments of secondary office property still contribute to office supply, in some areas as much as 20% of office stock could be considered structurally vacant.

Q: Why do you think more isn't being done to address this problem either through improvement initiatives or demolition?

5. The value of rental properties are typically accessed via comparable valuation with property maintenance accounted for under the terms of a full repair and insurance lease and a subsequent dilapidation procedure.

Q: What can be done to encourage more regular use of pro-active methods of property management and valuation, such as building condition surveys and discounted cash flow analysis?

6. There is broad support for adaptive re-use; however this is dependent on any adaptation sitting well within nearby use classifications and amenity provision.

Q: How can contemporary urban planning and the design of cities accommodate continual building adaptation?

7. The ability of a building to be readily adapted into another use should be a component of planning consent for new development.

Q : Do you think that this is a good idea? If yes, why? If not why?

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8. The 'office market' is not good at innovation and is reliant upon tried and tested development models, this often results in inertia, vacancy and standardised building designs with little regard to the flexible needs of the end user.

Q: How can this be improved?

9. The only way long life principles will be adopted by the 'market' is if sustainability and especially carbon is priced into the development equation.

Q: How could this be achieved?

10. Please provide any other comments

Appendix 5: Delphi Bitesize

Summarised Findings: The Secondary Office Vacancy and the Potential for Adaptive Re-use

This report presents the findings of the first stage of my PHD research, investigating secondary office vacancy and the potential for adaptive re-use, in which you kindly participated. The findings have been structured around the question guide used in the first stage of questioning and illustrate areas of respondent consensus. Following feedback regarding the length of the first stage interview exercise, the findings have been condensed into bite-size format (more detailed information can be provided upon request).

Please use the information contained in this report to illustrate and inform your responses to the separate document attached which seeks to explore some of the findings in a little more depth.

1. How would you define secondary office accommodation?

Secondary office properties are those properties that no longer meet 'prime' specification, are often in inferior locations and suffer from some degree of functional and or physical obsolescence and economic obsolescence. This type of property is typically found in towns and cities outside of London where demand for office space has diminished. The actual definition of secondary office property can be colloquial (for example the centre of London is very different to the rest of the UK) where office supply is tight dependent on the relative quality of property in a given location. In such areas there is even a niche market for speculative secondary space following the stripped back/found space model of the Californian technology cluster.

2. What are the primary causes of secondary office vacancy?

The primary causes of secondary office vacancy are various forms of obsolescence, excess supply and a consequent flight to better accommodation. This is sometimes compounded by artificially high rents, either because of landlord inflexibility or because landlords want to justify a change in use application. 'Secondary' office property is often ignored by market institutions in preference to 'prime' property, supply and take up is often calculated as a percentage of prime supply rather than overall office property supply. This leaves secondary office vacancy largely hidden apart from in times of recession where development of prime property declines and investors look for alternative means of value creation.

3. What are the barriers to bringing vacant secondary offices back into use?

The main barrier regarding bringing secondary office property back into use is economic viability; the expected rate of return/achievable rent does not cover the cost of improvement. In some areas there is still a need for secondary office accommodation, to at least be held in reserve, this is particularly relevant in the 'core cities.' However there is a catch 22 situation where achievable rent is not enough

to pay for building improvement, a do nothing approach is untenable and conversion into another use is the only economically viable course of action.

4. How do property owners, investors and regulators identify the incidence of depreciation and obsolescence in relation to secondary office property?

Building depreciation and obsolescence is most commonly identified via price change and comparable valuation in those properties available for let. Pro-active identification, for instance through building condition surveys and discounted cash flow valuation is more likely in buildings that are used for operational purposes. Continued depreciation in some vacant secondary stock is largely off the radar as active transaction data does not exist due to long term inactivity.

5. How do landowners, investors and regulators manage depreciation and obsolescence (if at all) in relation to secondary office property?

Depreciation and obsolescence is typically managed via the terms of full repairing and insuring (FRI) lease practice and dilapidation procedures, this is particularly the case in longer lease agreements. This relieves the landlord of liability and places the burden on the tenant, however this process only accounts for physical obsolescence and does not account for functional and economic obsolescence. In other words a traditional FRI lease is more than adequate in regard to general physical maintenance; however it cannot react to or account for changes in the nature of occupier demand.

6. What does the term 'structural vacancy' mean to you?

The term 'structural vacancy' did not have much salience with respondents, the terms secondary and tertiary properties were more likely to be used. A key recommendation was the need for the subsequent creation of an established definition.

7. What specific characteristics does 'structural' vacancy have?

Structural office vacancy describes those secondary office properties that no longer have any relationship with occupier demand regardless of market conditions. These properties must be upgraded in their current use, be adapted into another use or removed from supply altogether.

8. What strategies are being followed by landlords, investors and regulators to tackle the incidence of 'secondary office vacancy'?

Landlords are attempting to rebrand and introduce tenant incentives in order to combat the incidence of secondary office vacancy. However, this is often a race to the bottom regarding ever diminishing returns or a stop gap while conversion to another use is considered and then developed.

9. Recently legislation has been passed that has relevance to 'secondary office vacancy,' what are your views regarding:

i) Permitted development right rule changes for office to residential conversion

Permitted development right (PDR) rule changes have been well received especially in terms of sentiment. There is some geographical tension between Greater London and the rest of the UK. The consensus is that London, in particular the centre, has very different office market conditions and residential values to the rest of the country. Office space is often in very short supply in the centre of London but the opposite is true in the rest of the UK. While PDR rule changes may not be appropriate in the centre of London, this objection should not be extended to the rest of the UK.

While the sentiment of PDR changes is welcomed there is wide spread suspicion regarding the impact of these changes, economic viability is more likely to be the critical factor in any building adaptation (a challenge outside of London). In addition, there is widespread concern that PDR changes only regard the building per se, to be truly successful these changes must also regard similar flexibility in regard to the location of buildings. Otherwise there is a risk that flexible change in use will take place with relative ease in areas still governed by restrictive zoning characteristics. Any use must compliment the other in its vicinity, something that has not necessarily been considered in the current legislation

ii) Minimum energy performance certification (EPC) enforceable in 2018

Attitudes toward EPC legislation is generally positive, however in many cases the 2018 deadline is an unrecognised ticking time bomb with certain sectors of the office market, in particular lenders, only just beginning to price in the potential risk.

iii) Business Premises Renovation allowance (BPRA)

BPRA is a powerful tool in converting vacant office space into hotel and student accommodation. However, it cannot be used for housing conversion and is only permitted in assisted areas. An overwhelming finding regards the lack of publicity associated with this scheme, most people have never heard of it.

iv) Empty property taxation (EPR)

Findings suggest that EPR is not popular in regard to vacant secondary office property, empty property rates are more likely to prohibit landlords from improving properties (the pursuit of avoidance strategies are more likely) rather than an incentive toward improvement.

10. In your view, what are the solutions available to tackle 'secondary' office vacancy?

Findings suggest that there are only two solutions regarding vacant secondary office property (in particular those suffering from structural vacancy), change of use or demolish. The retention of properties in current use, through rebranding and tenant incentives is being pursued but this is a race to the bottom in pursuit of diminishing returns.

11. What do you understand the term 'adaptive re-use' to mean?

Findings suggest that adaptive re-use is not part of common office market vocabulary or parlance; 'change in use,' 'conversion' and 'transformation' is more likely to be used to describe the change from office in to an alternative use.

12. What are your views regarding adaptive re-use as a potential solution to 'secondary office vacancy'?

Adaptive re-use (change in use) is an effective means of reinvigorating underperforming secondary properties, in particular those that suffer from 'structural vacancy.' Alternative use, such as housing, hotel and student accommodation, is often more lucrative in terms of achievable rent and cheaper in terms of liability for maintenance as specification isn't as onerous.

13. What are the critical factors that make an adaptive re-use approach viable in the UK?

The critical factors in an adaptive re-use project are economic viability, landlord and/or developer vision, institutional appetite, the presence of demand, building specification and flexible urban policy. While economic viability, physical specification and urban policy were perhaps predictable consensus points, there was also notable consensus around the less tangible facets of development such as vision, creativity, appetite and the institutional norms of real estate development.

In order for adaptive re-use to be part of routine market behaviour, development must be user focused rather than supply orientated and spread sheet driven, while the supply chain of building products should start to emphasise modular/generic components which can be easily interchanged to facilitate flexible re-use. Building Information Modelling (BIM) was regularly mentioned as a means of driving down conversion cost and directing decision making in regard to adaptation.

14. What are the key barriers to the pursuit of adaptive re-use?

The key barriers to the pursuit of adaptive re-use are typically the reverse side of the assistive factors outlined in question 13. Economic viability is often hard to achieve, physical specification is not appropriate while the relevant urban policy can often be prohibitive, for instance permitted development rights do not apply to the building exterior.

Often the office market and its various institutions rely on standardised building designs, appraisal techniques and physical products which do not account for end user need or the possibility of adaptive re-use. There is something of a bunker mentality where industry continues to churn out standardised building products with ever increasing degrees of specification which only serves to render older buildings obsolete in terms of the 'best' specification.

There was overwhelming consensus that the key barrier to adaptive re-use is the tension between the short term development motives of the finance, investment and developer and the longer term perspective of adaptive re-use. Standard development appraisals often do not look beyond the first

lease event or initial ten years of building life. Buildings are often sold on and traded before they are even occupied. The potential re-use of buildings is not part of market behaviour as the standard models of property development do not typically look that far in to the future.

15. How should buildings in the future be developed in order to assist continual adaptive re-use?

In order to promote adaptive re-use, buildings in the future should be designed and constructed with a certain amount of functional tolerance in order to support continual change in use. It is not only about buildings but also about how society and working practices need to change in the future and how building design influences worker productivity, health and wellbeing. Flexibility in construction is important as is use of BIM in design.

Structural components of buildings should be built to last while internal layouts must be designed to be completely interchangeable with floor loadings enough to satisfy various building use options. Any building design should fit into the long term vision for the 'city' rather than defined by piece meal development.

16. How could the principles of adaptive re-use be promoted?

The principles of adaptive re-use should be promoted by flexible urban policy and governmental tax ordinance which can be used to reduce the cost of capital expenditure. Examples of good practice should be promoted to provide proof of concept and utilised to inform future adaptation projects, BIM can be used to store and efficiently visualise this information.

Appendix 6: Coding Framework

Delphi Analysis			
Code	Strand	Sub Strand 1	Comments/Interpretation
1	What is Secondary		
1.1	Lost for words	<ul style="list-style-type: none"> - Ambiguity - Lots of definitions - Defined in contrast with prime - Confusion with Grade 	Secondary is not the same as structural but often taken for one and the same
1.2	Cyclical	<ul style="list-style-type: none"> - Cycles - Two tier market - Rate of churn 	Not just temporal, speed also important
1.3	Colloquial	<ul style="list-style-type: none"> - Locationally varied - shabby sheek - speculative build 	Prime secondary?
1.4	Colour	<ul style="list-style-type: none"> - Grey space - Hidden vacancy - disguised 	What is vacancy? A vacant building or a barometer of inefficiency
1.5	Physical obsolescence	<ul style="list-style-type: none"> - Ugly/Not modern - Expensive to run - Don't make money 	Building or management problem? Society?

		- Not buildings fault	
1.6	Structural vacancy	- Properties no longer fit for original purpose - Colloquial	
2	Causing Secondary Office Vacancy		
2.1	Structural change in demand	- The discerning user - End user ignored - Demand is not static - The discerning employer	Office no longer relevant?
2.2	Physical issues	- Age - Planning restrictions - Aesthetics - Structural issues - Spatiality - M & E - Location - Environment - Legal	Government cross references throughout No change
2.3	Obsolescence	- Culpable? - Explicit measurement	Different approaches from public and private sector - same result

		<ul style="list-style-type: none"> - Implicit measurement - Conventional FRI 	
2.4	Government policy	<ul style="list-style-type: none"> - PDR turbulence - Government restructuring - Planning 	Cause and management strategy
2.5	Local markets/rent	<ul style="list-style-type: none"> - Gap funding needed in certain situations - locational and economic viability 	<p>Economic viability</p> <p>Rent is not high enough to cover cost of improvement</p>
2.6	Institutions	<ul style="list-style-type: none"> - Market signals/spreadsheets and cranes in sky - Short term perspective - Long term asset valuation - Educational orthodoxy - Lack of information 	Invisibility
2.7	Enhanced specification	<ul style="list-style-type: none"> - Planned obsolescence - Risk - Over specification - EPS/MEPS/BCO 	Market cannibalism
3	Managing Secondary Office Vacancy		

Appendices

	Adaptive re-use	<ul style="list-style-type: none"> - Meaningless term - Agility more useful 	Adaption is the change, agility is the ability to change
	Management strategies	<ul style="list-style-type: none"> - Exploitation - Reposition - Renewal - Removal 	On a continuum rather than mutually exclusive
	Economic factors	<ul style="list-style-type: none"> - Economic Conditions - Rent/vale - Cost - Lending - Value 	Economic viability
	Economic appraisal	<ul style="list-style-type: none"> - Valuation method - Rate of Return - Presence of Demand - Risk - Programme 	Continuum
	Building appraisal	<ul style="list-style-type: none"> - Post war best - 1960 - 1970's decent - 1980+ over specified/poor location - Aesthetics 	Older better/newer adequate

Appendices

		<ul style="list-style-type: none"> - Accessibility - Amenities 	
	Ingredients of building agility	<ul style="list-style-type: none"> - PDR - New development bias - vision/appetite - ICT/5G - DDA/fire safety/MEPS - Sustainability not important 	Considerable cross reference between categories
4	Ameliorating secondary office vacancy		
	Disruptive innovation	<ul style="list-style-type: none"> - Functional tolerance - Planned obsolescence 	Both plausible, latter links back to 2.7
	Spatial agility	<ul style="list-style-type: none"> - Link into location - Assistive ordnance - Changing planning practices 	More planning
	Design guidance	-Linking to guidance to contemporary	Ska is fit for prime not secondary
	Unified model	<ul style="list-style-type: none"> - Valuation - Appraisal - Material - Information 	Collaboration
	Education and project management	New teaching	Alignment with core competencies?

Appendix 7: Papers Published from Research

Citibase (2015) Taking Stock: Secondary Opportunities and the Agile Future

Muldoon-Smith K and Greenhalgh P (2015) Passing the buck without the bucks: Some reflections on fiscal decentralisation and the Business Rate Retention Scheme in England *Local Economy*, 30(6):609-626.